



## Appendix A

### RF Test Data for BT (Conducted Measurement)

Product Name: Digital Projector

Test Model: NeoPix 230 Smart

#### Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
	<i>Taylor Hu</i>
Supervised by:	Nick Peng
	<i>Nick Peng</i>





### A.1 -20dB Bandwidth

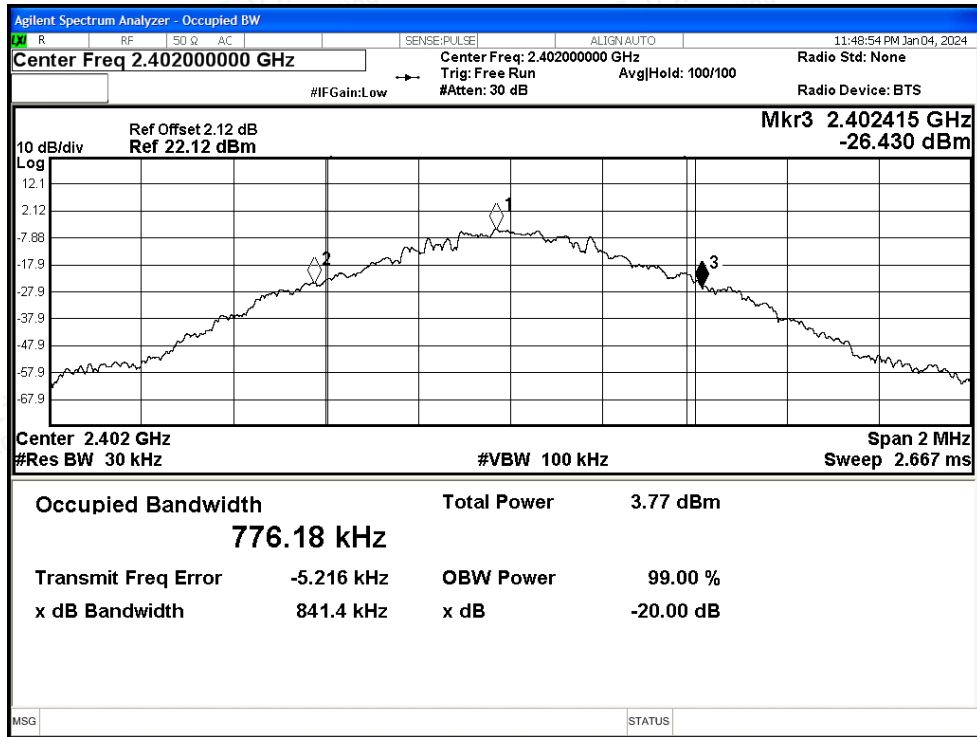
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant	0.841	N/A	Pass
NVNT	1-DH5	2441	Ant	0.853	N/A	Pass
NVNT	1-DH5	2480	Ant	0.85	N/A	Pass
NVNT	2-DH5	2402	Ant	1.259	N/A	Pass
NVNT	2-DH5	2441	Ant	1.279	N/A	Pass
NVNT	2-DH5	2480	Ant	1.262	N/A	Pass
NVNT	3-DH5	2402	Ant	1.3	N/A	Pass
NVNT	3-DH5	2441	Ant	1.3	N/A	Pass
NVNT	3-DH5	2480	Ant	1.286	N/A	Pass



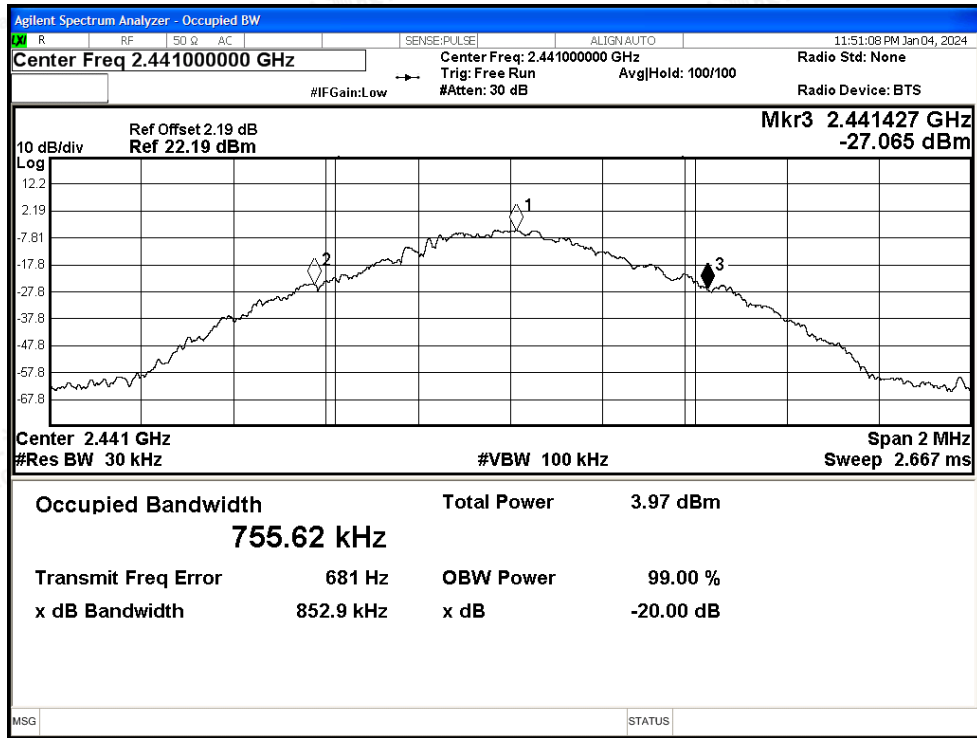


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant

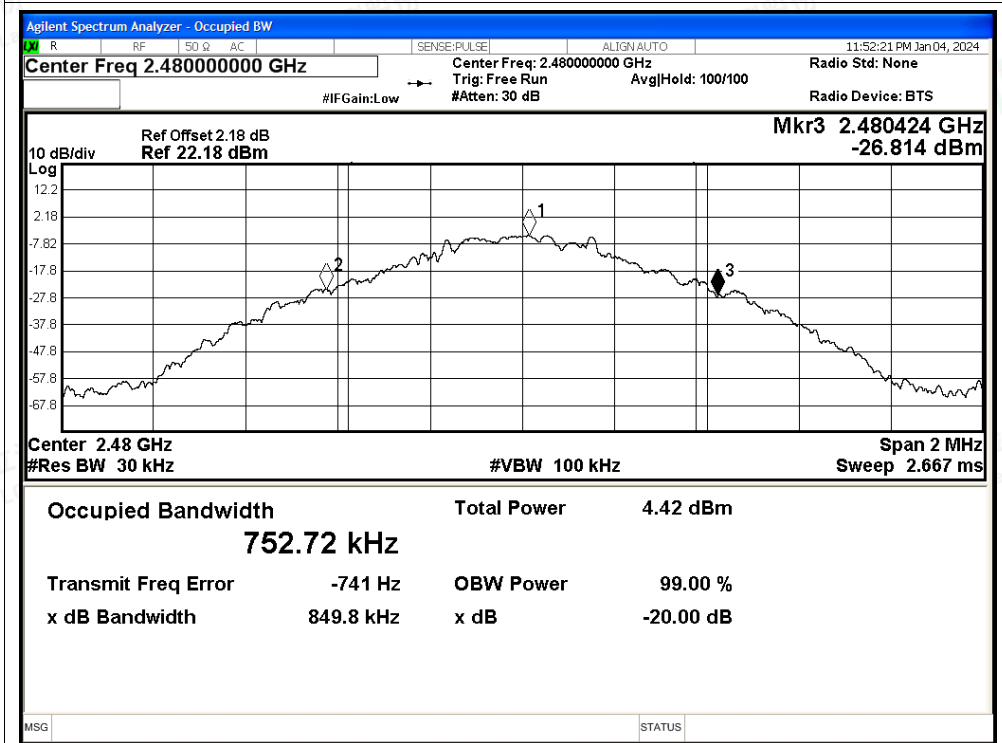


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant

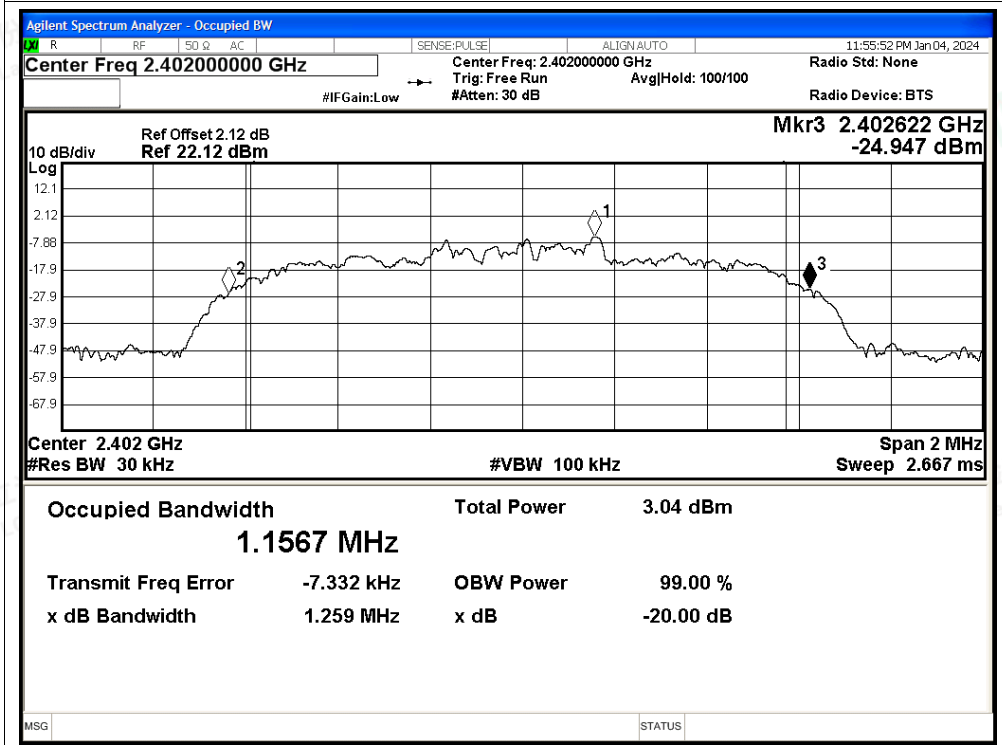




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant

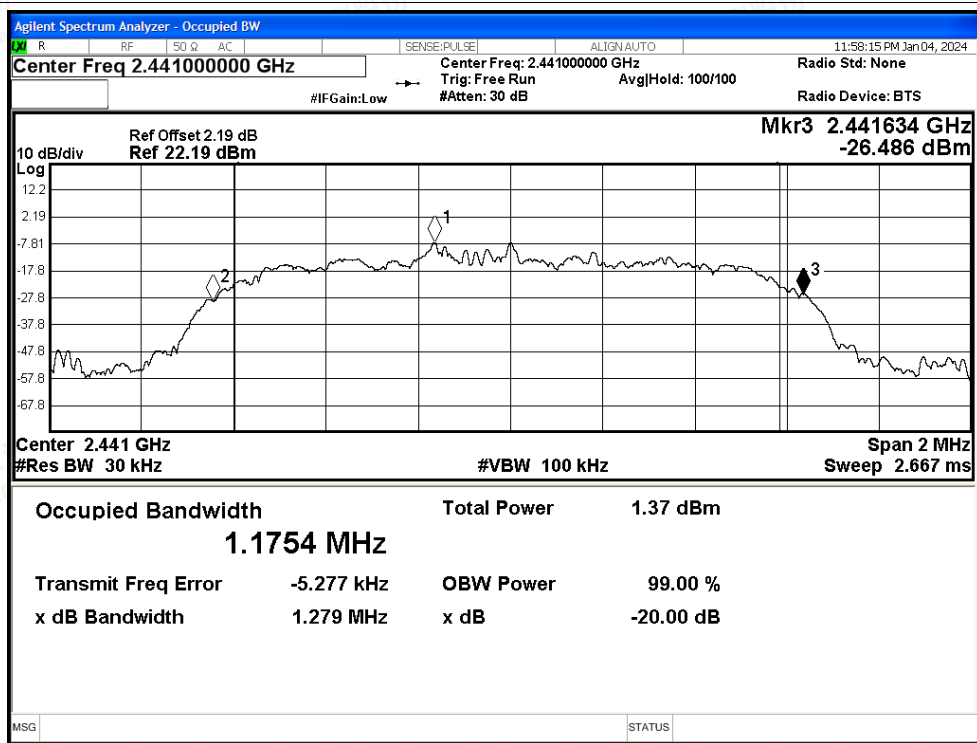


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant

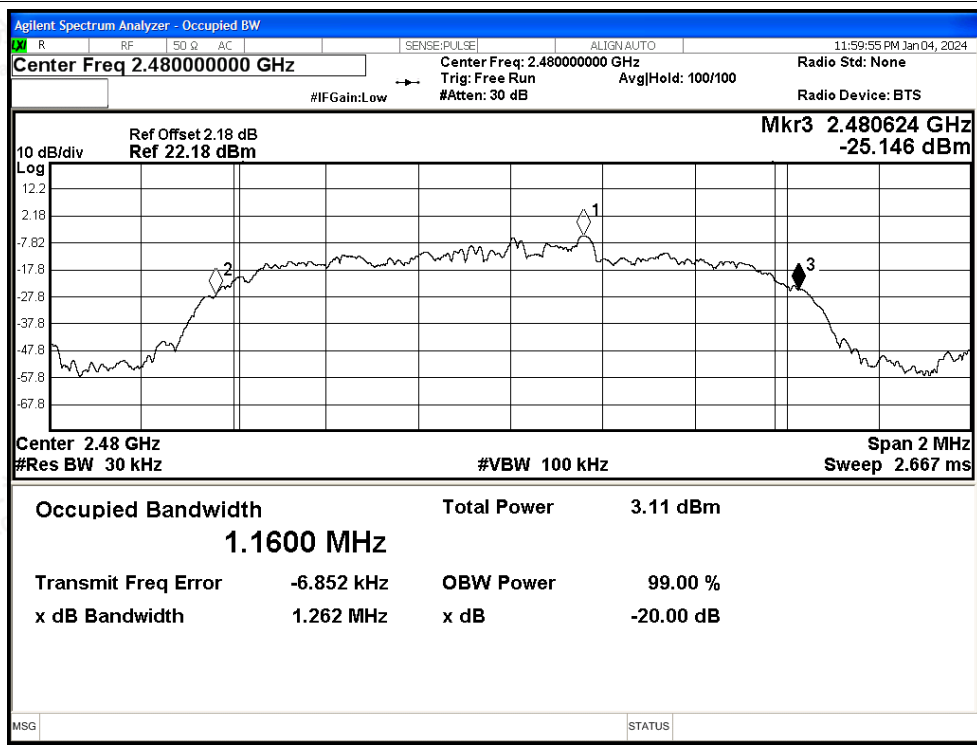




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant

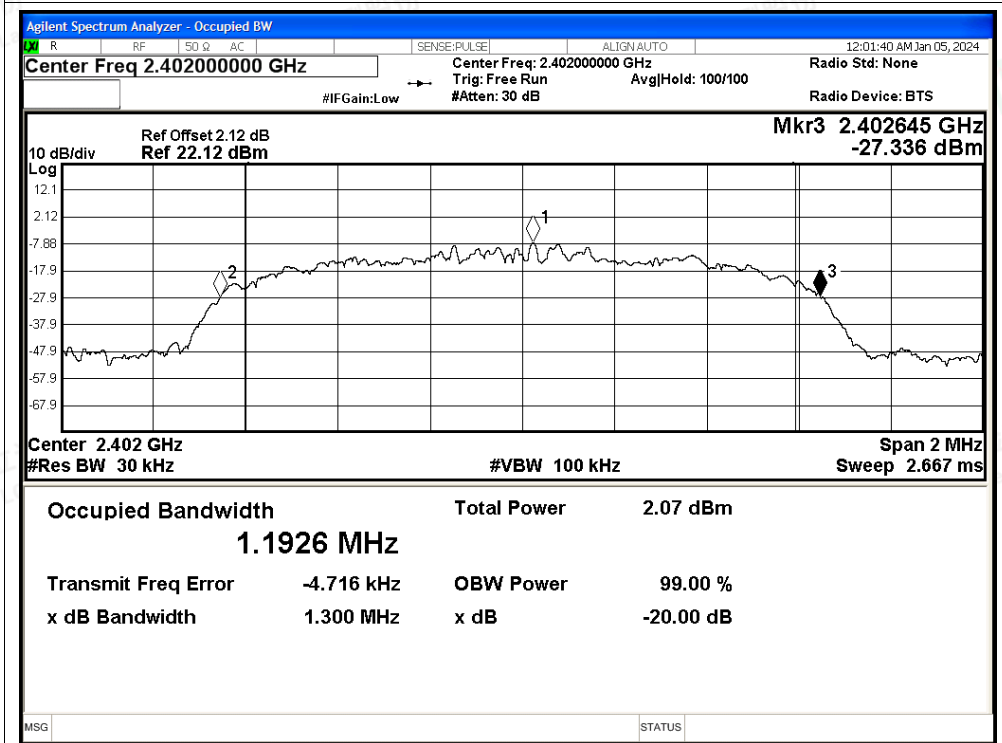


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant

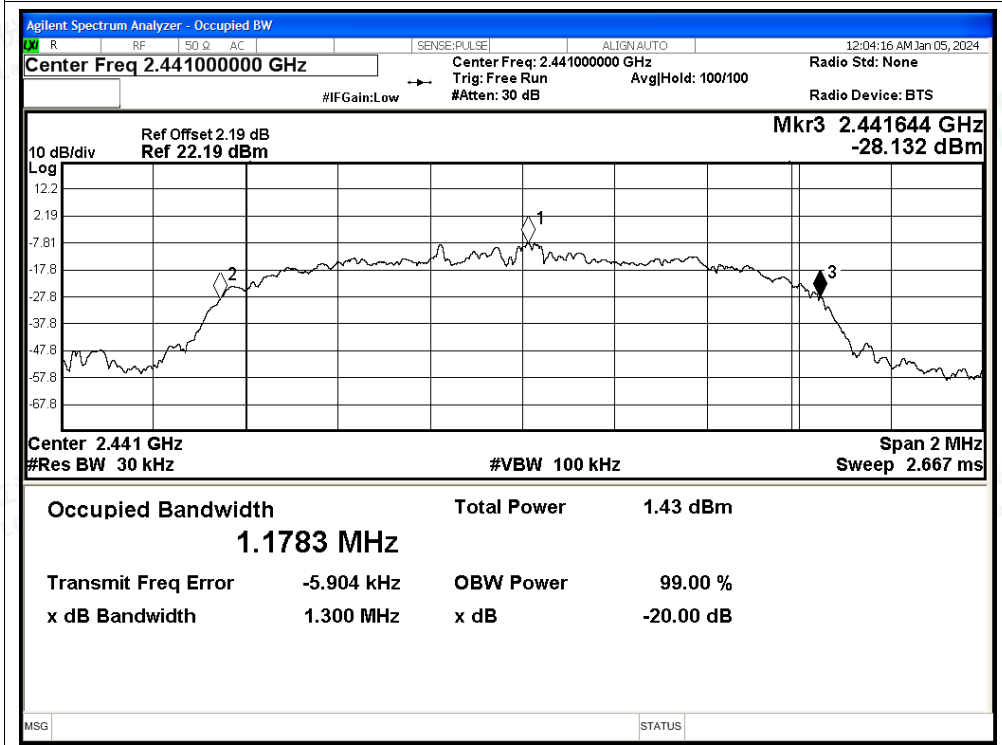


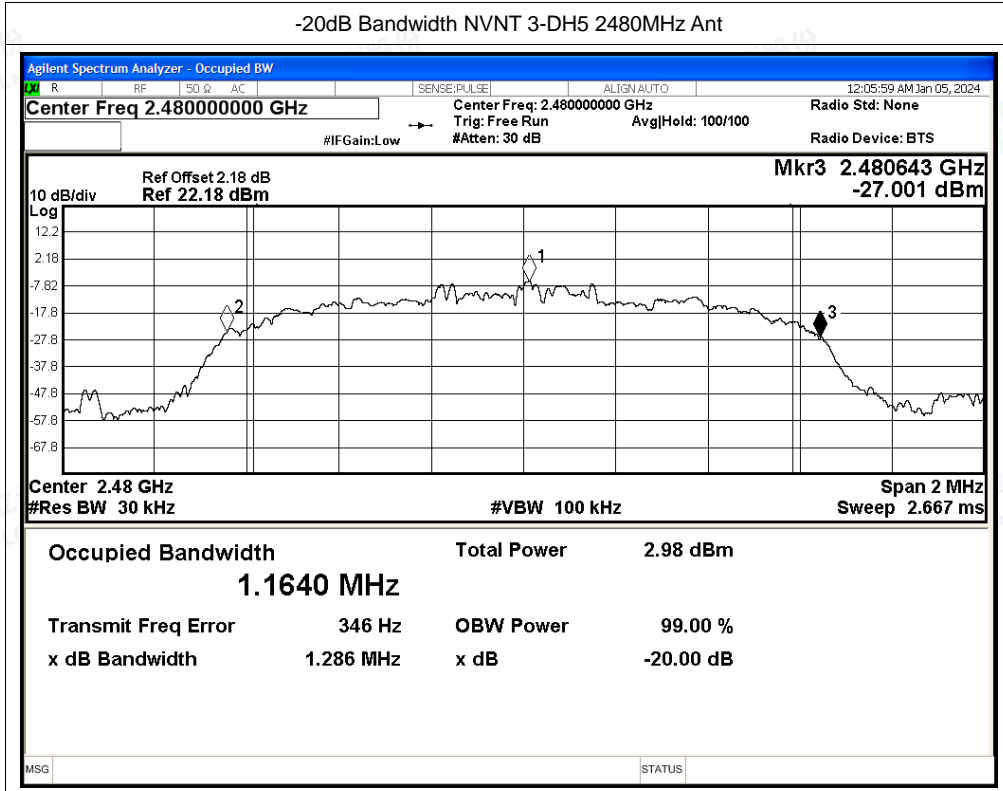


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant







## A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant	-1.63	21	Pass
NVNT	1-DH5	2441	Ant	-2.15	21	Pass
NVNT	1-DH5	2480	Ant	-1.84	21	Pass
NVNT	2-DH5	2402	Ant	-2.24	21	Pass
NVNT	2-DH5	2441	Ant	-2.83	21	Pass
NVNT	2-DH5	2480	Ant	-1.93	21	Pass
NVNT	3-DH5	2402	Ant	-2.23	21	Pass
NVNT	3-DH5	2441	Ant	-2.89	21	Pass
NVNT	3-DH5	2480	Ant	-1.89	21	Pass

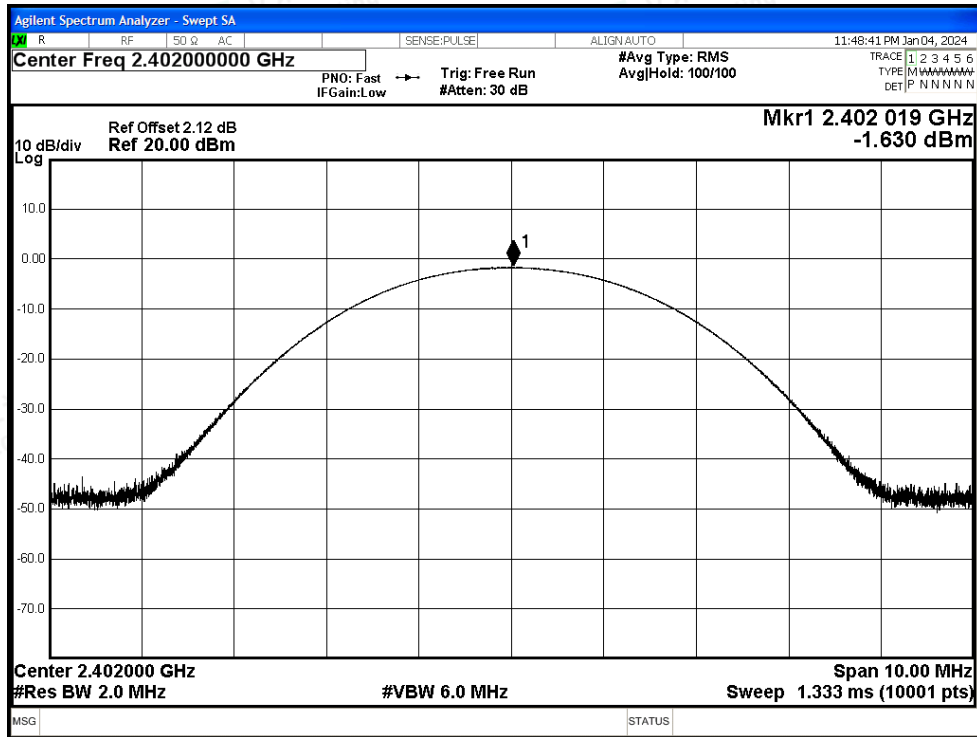




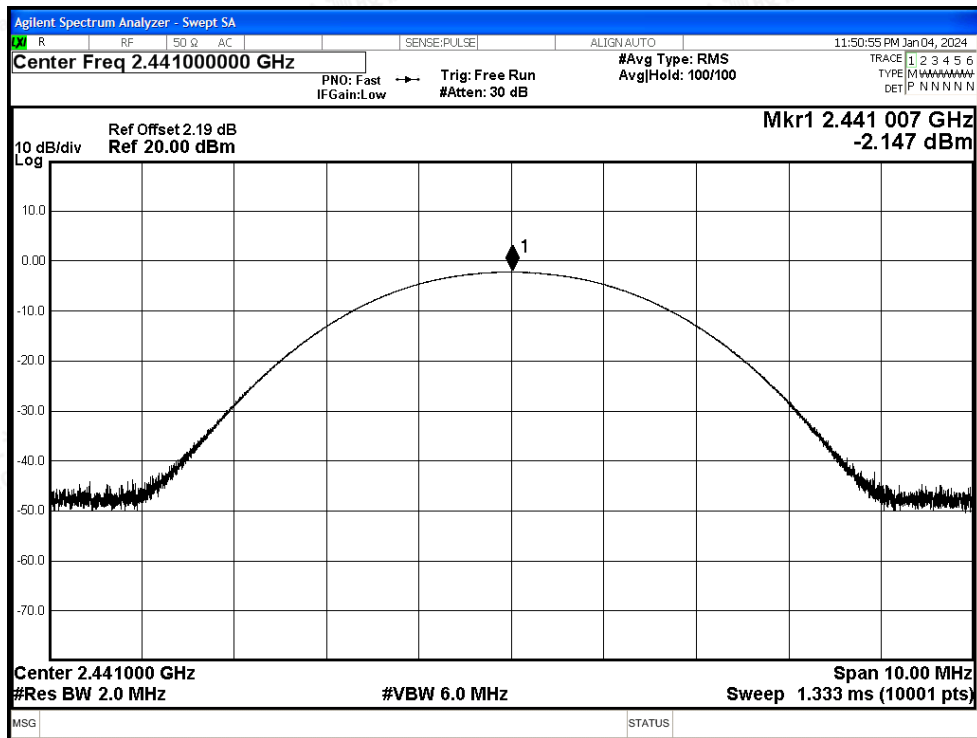


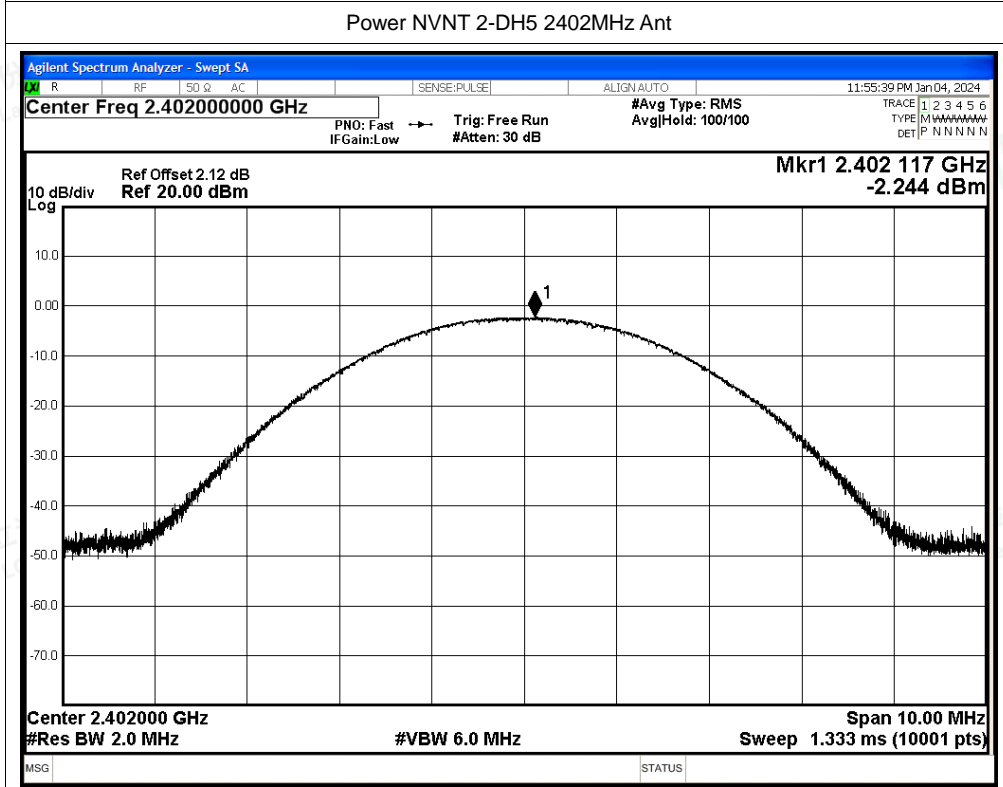
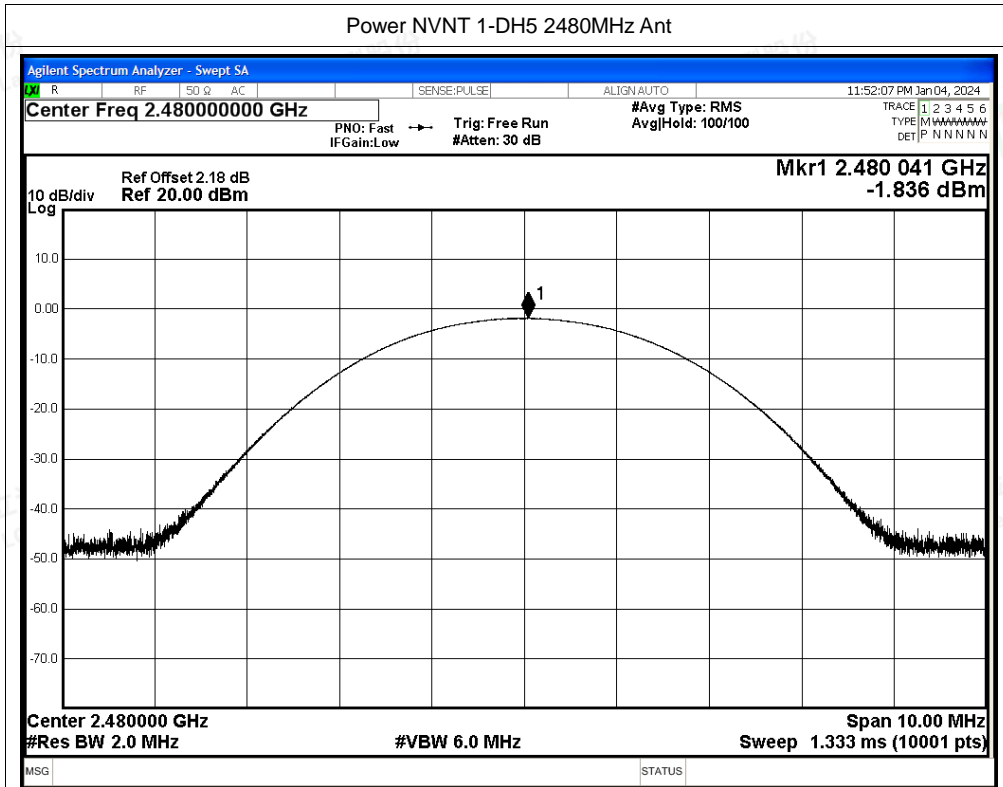
Test Graphs

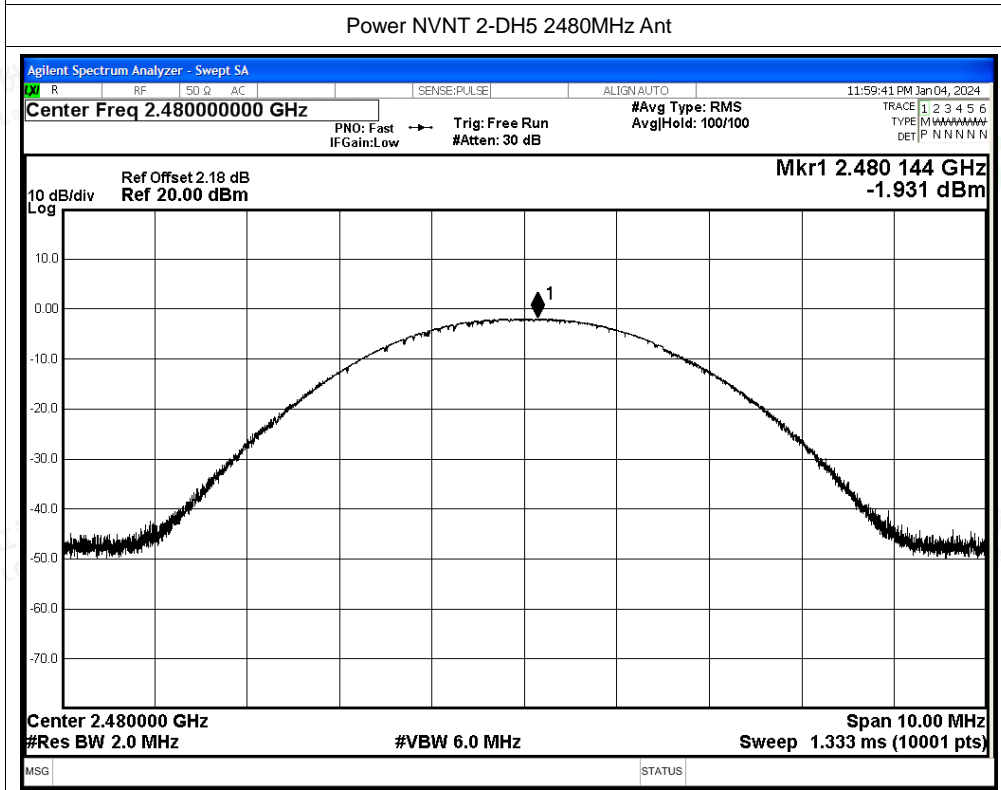
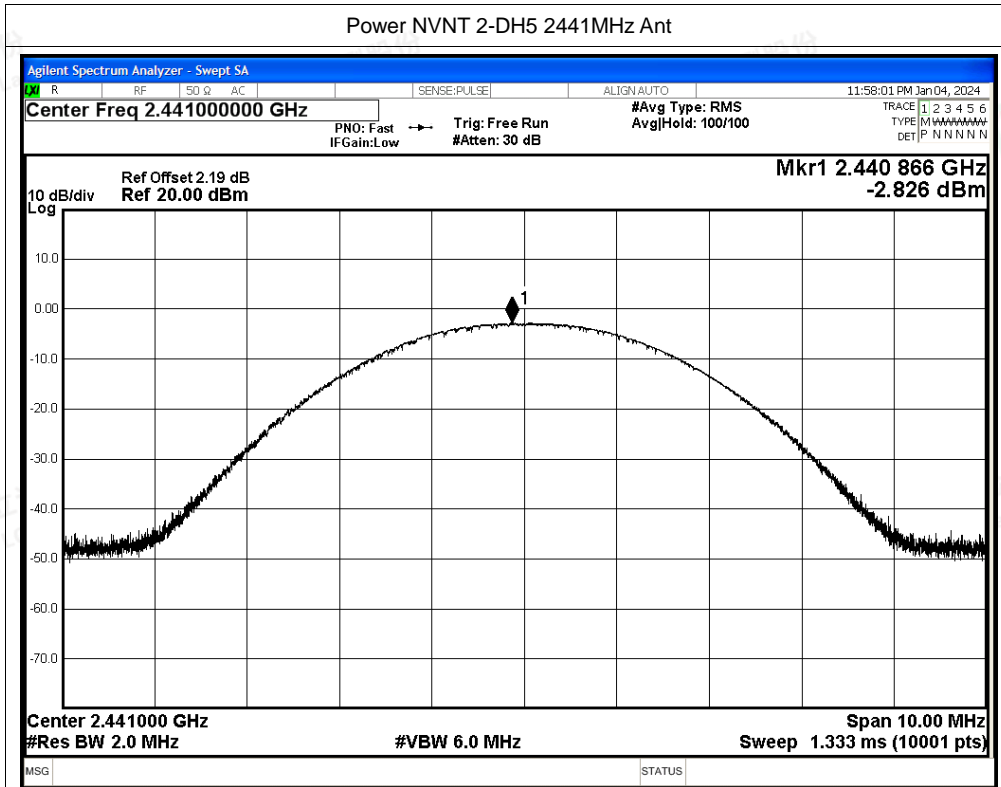
Power NVNT 1-DH5 2402MHz Ant

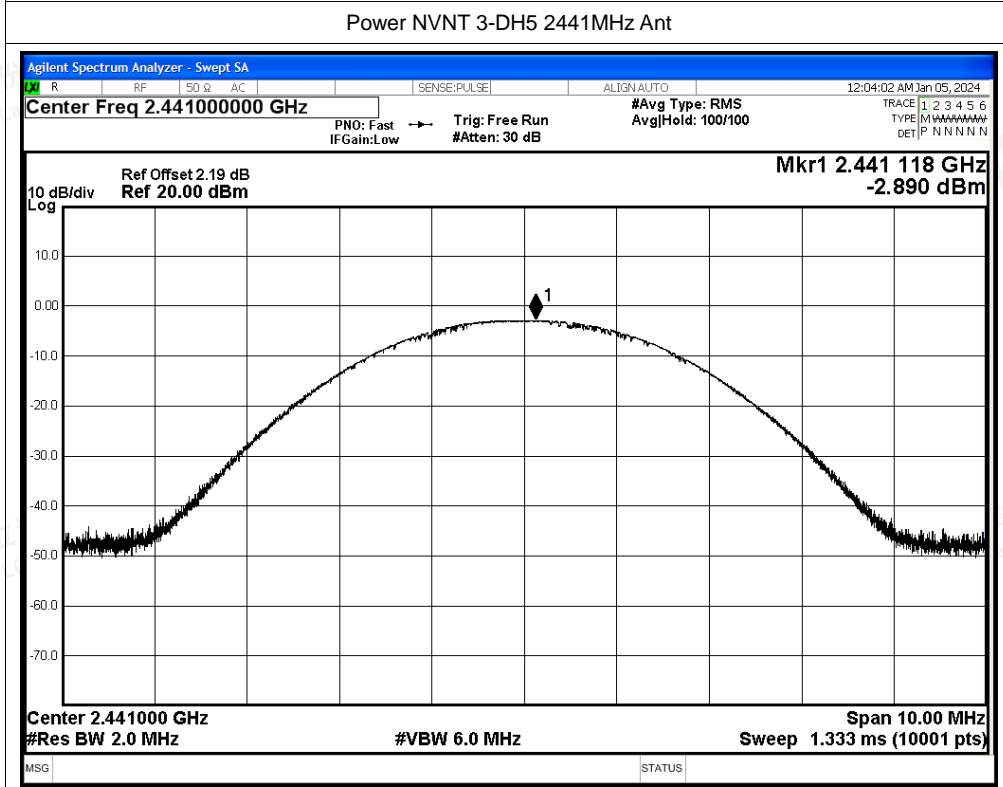
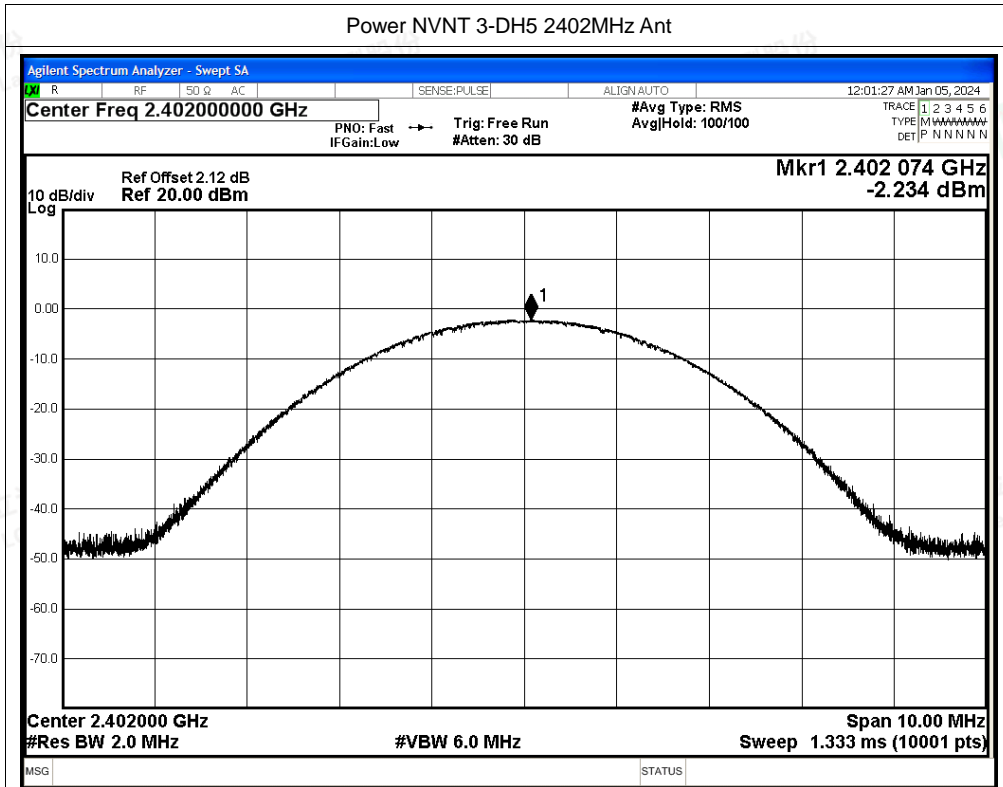


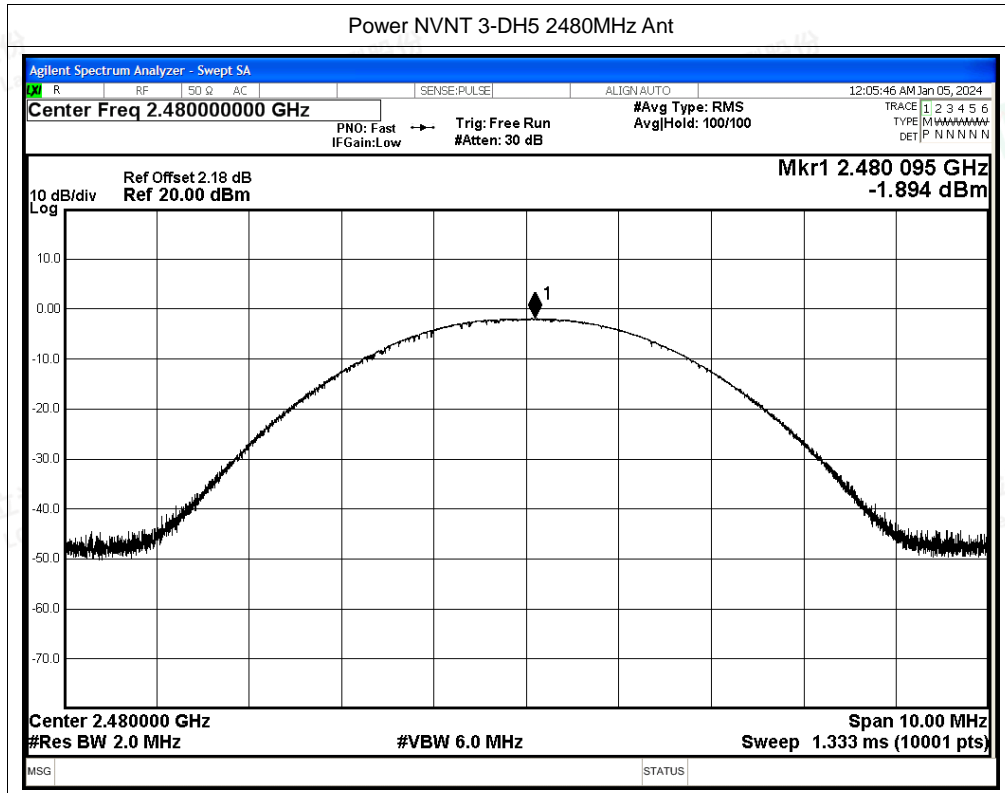
Power NVNT 1-DH5 2441MHz Ant













### A.3 Carrier Frequencies Separation

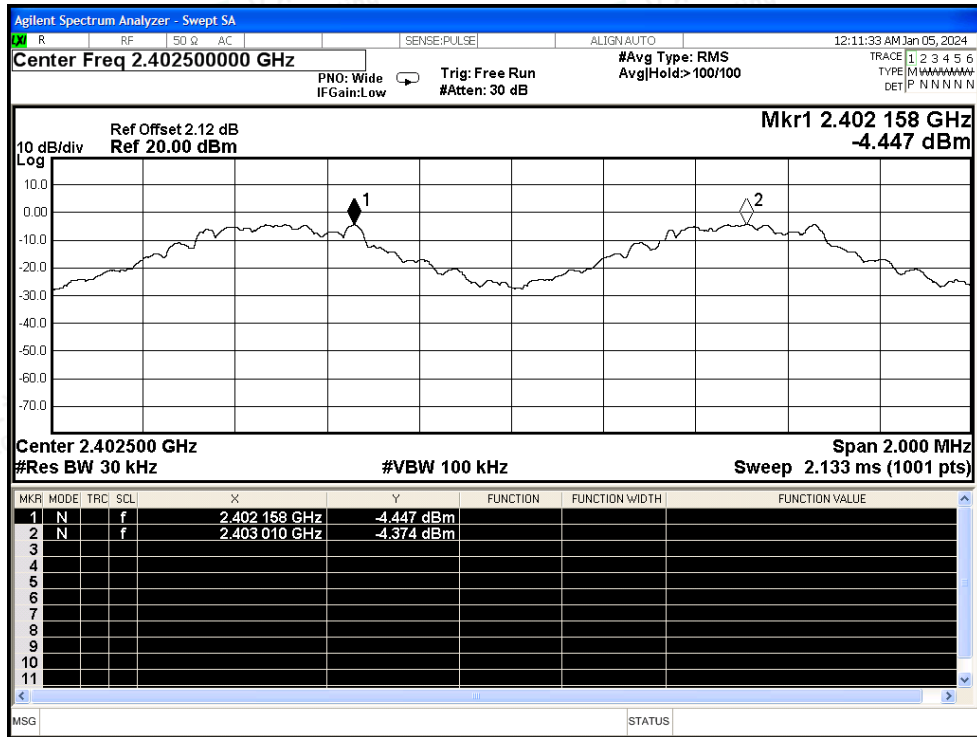
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant	2402.158	2403.01	0.852	0.569	Pass
NVNT	2-DH5	Ant	2402.16	2403.158	0.998	0.853	Pass
NVNT	3-DH5	Ant	2402.16	2403.162	1.002	0.867	Pass



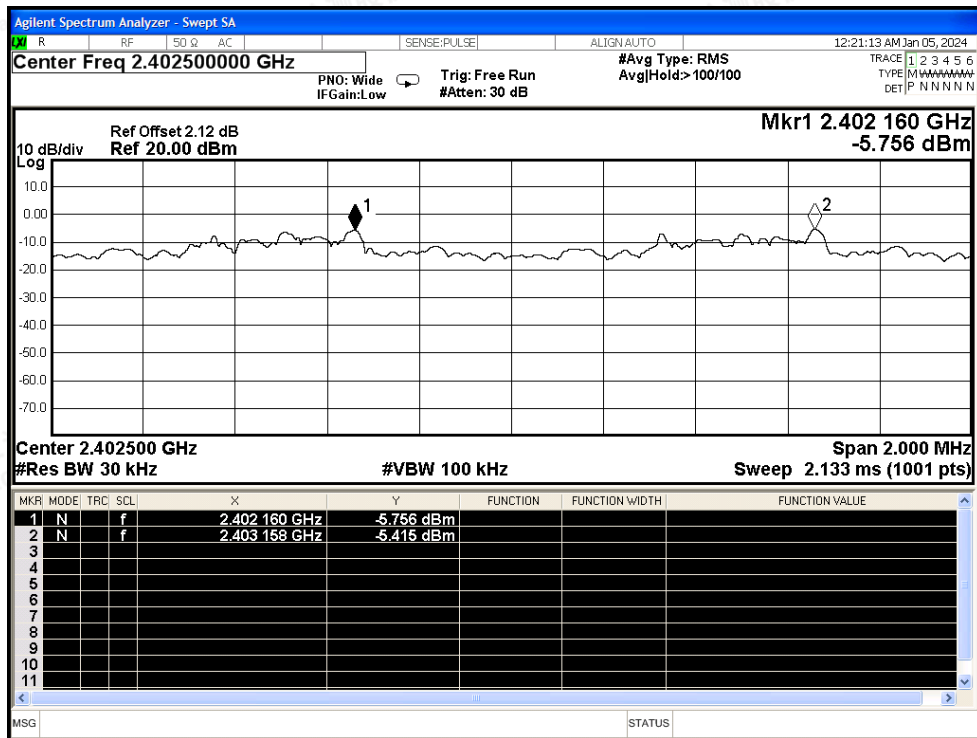


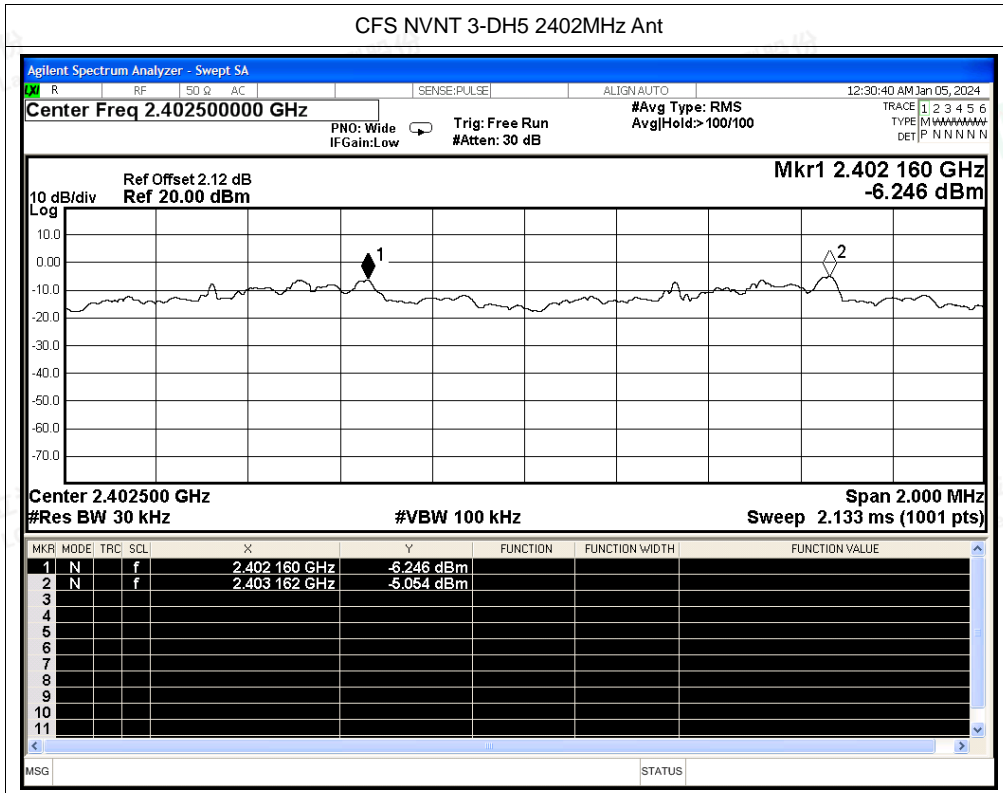
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant



CFS NVNT 2-DH5 2402MHz Ant









### A.4 Dwell Time

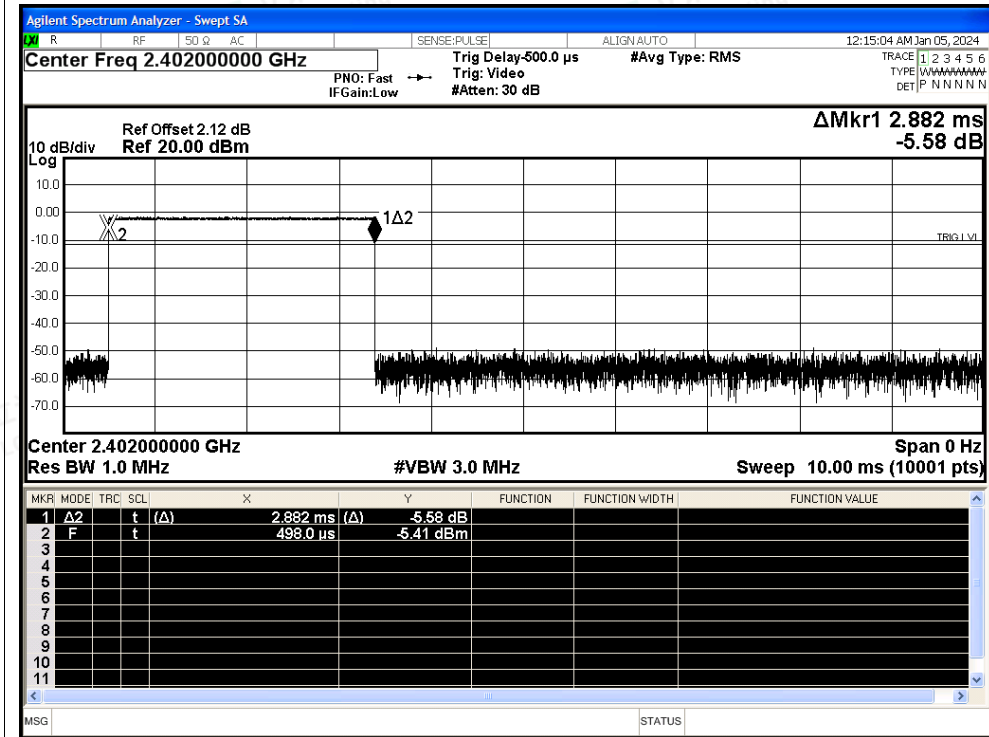
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant	2.882	291.082	101	31600	400	Pass
NVNT	2-DH5	2402	Ant	2.881	296.743	103	31600	400	Pass
NVNT	3-DH5	2402	Ant	2.887	291.587	101	31600	400	Pass



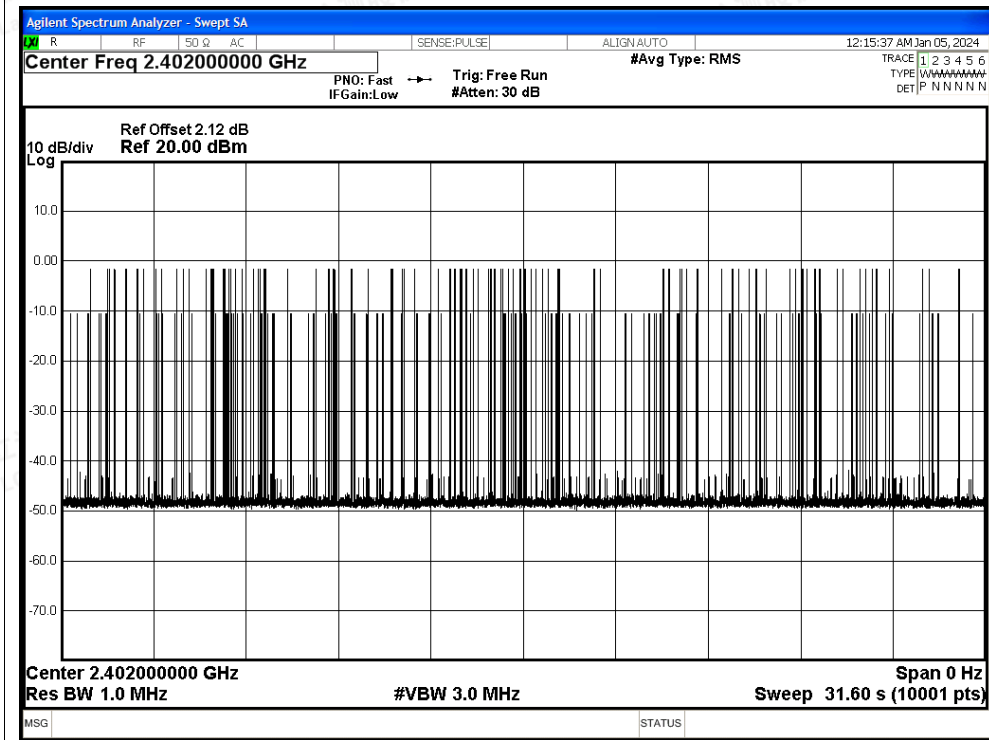


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant One Burst

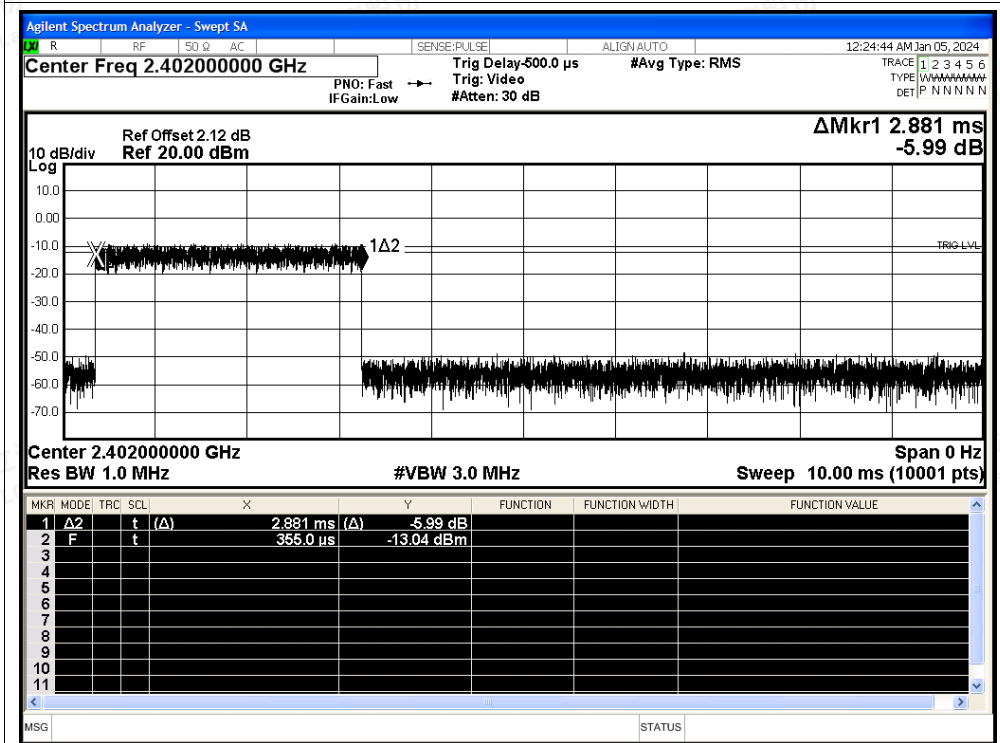


Dwell NVNT 1-DH5 2402MHz Ant Accumulated

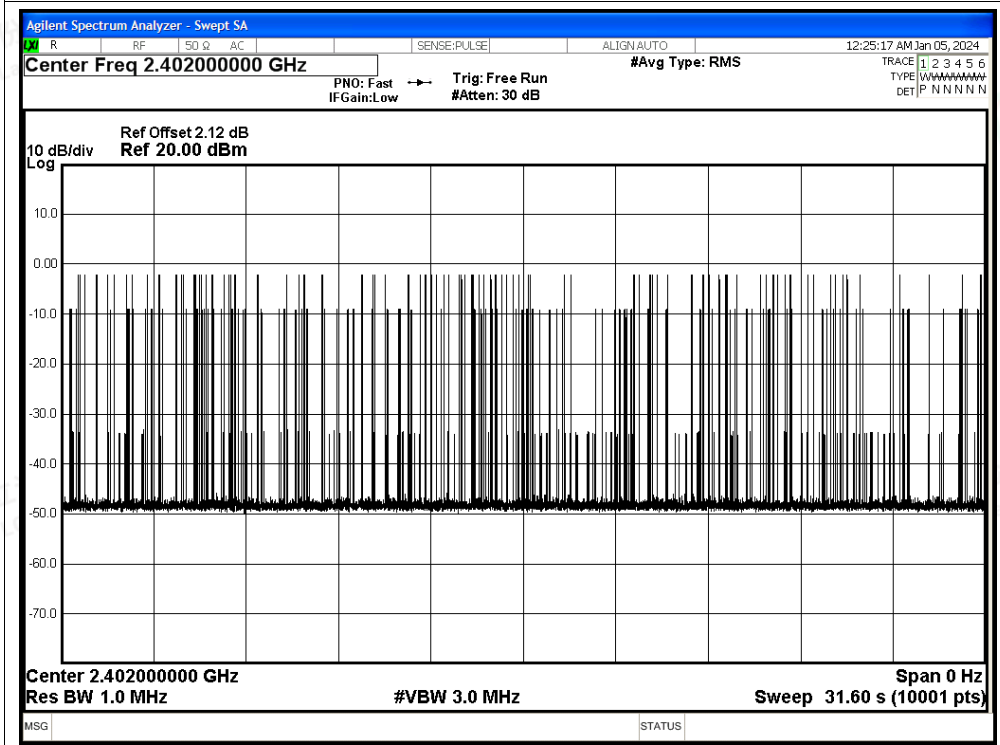




Dwell NVNT 2-DH5 2402MHz Ant One Burst

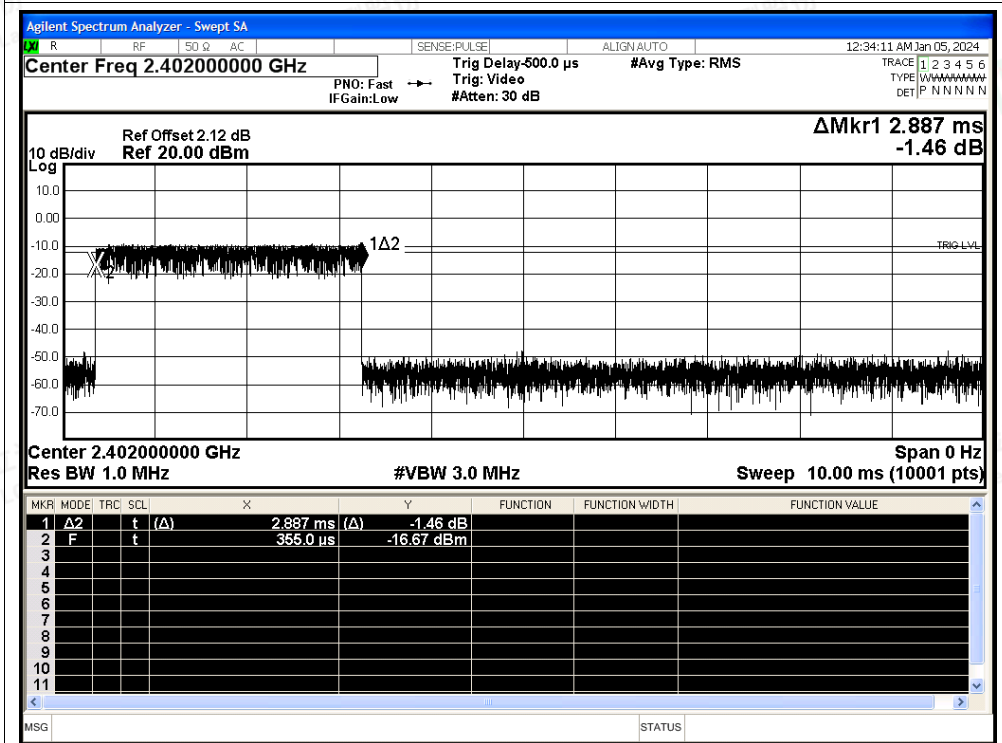


Dwell NVNT 2-DH5 2402MHz Ant Accumulated

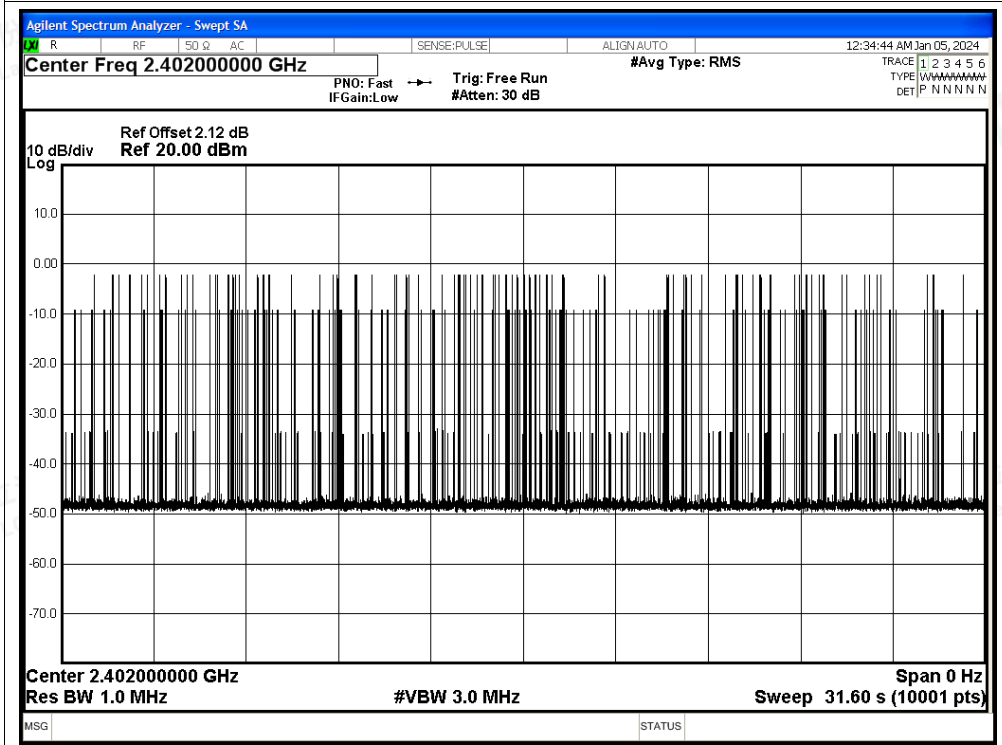




Dwell NVNT 3-DH5 2402MHz Ant One Burst



Dwell NVNT 3-DH5 2402MHz Ant Accumulated





### A.5 Number of Hopping Channel

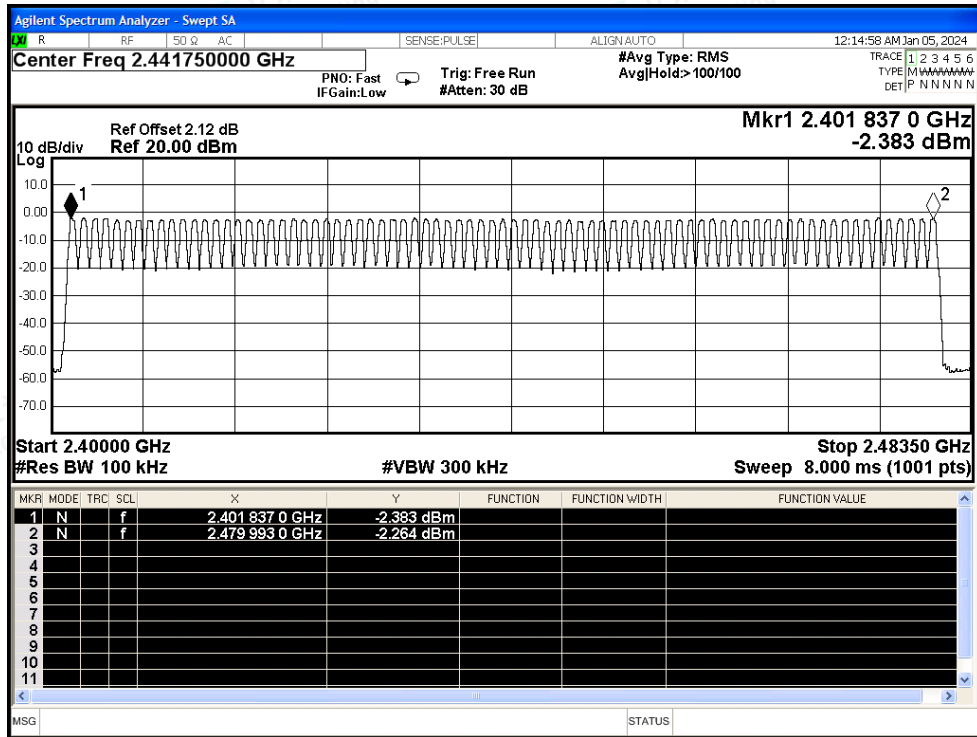
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant	79	15	Pass
NVNT	2-DH5	Ant	79	15	Pass
NVNT	3-DH5	Ant	79	15	Pass



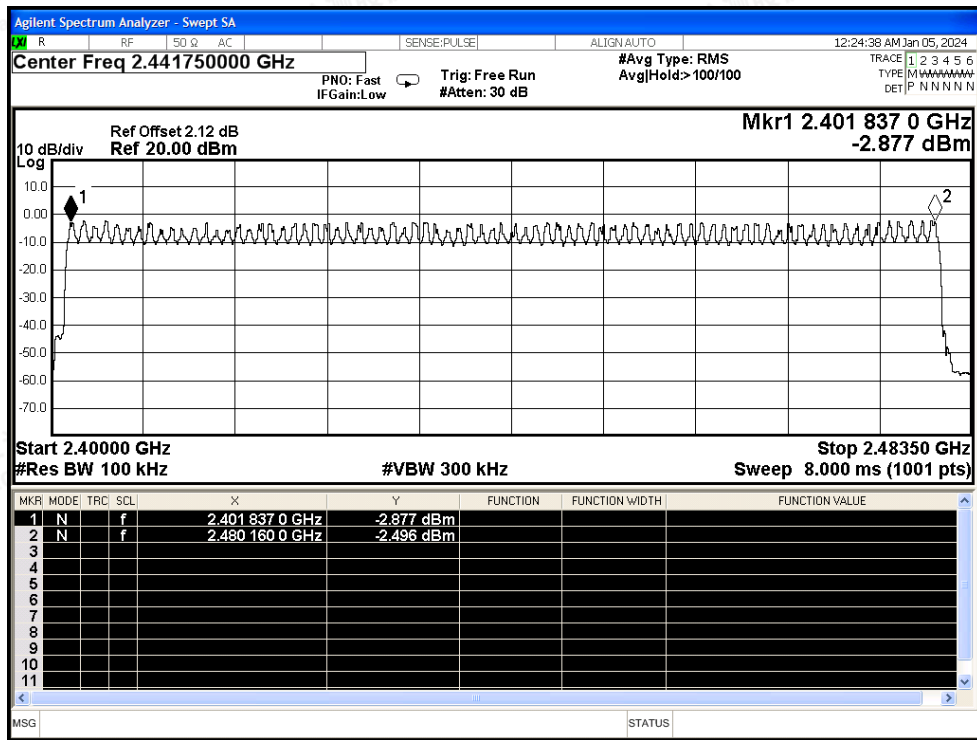


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant

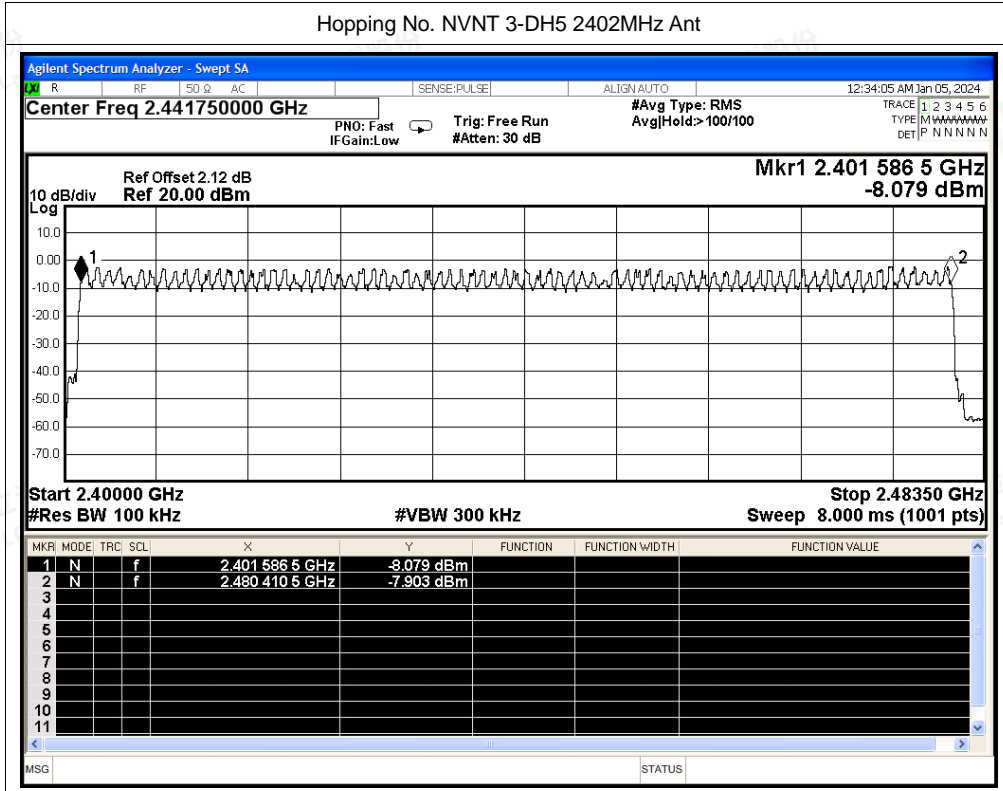


Hopping No. NVNT 2-DH5 2402MHz Ant





Hopping No. NVNT 3-DH5 2402MHz Ant





## A.6 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	No-Hopping	-54.3	-20	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	-54.92	-20	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	-50.8	-20	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	-54.42	-20	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	-50.36	-20	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	-54.29	-20	Pass

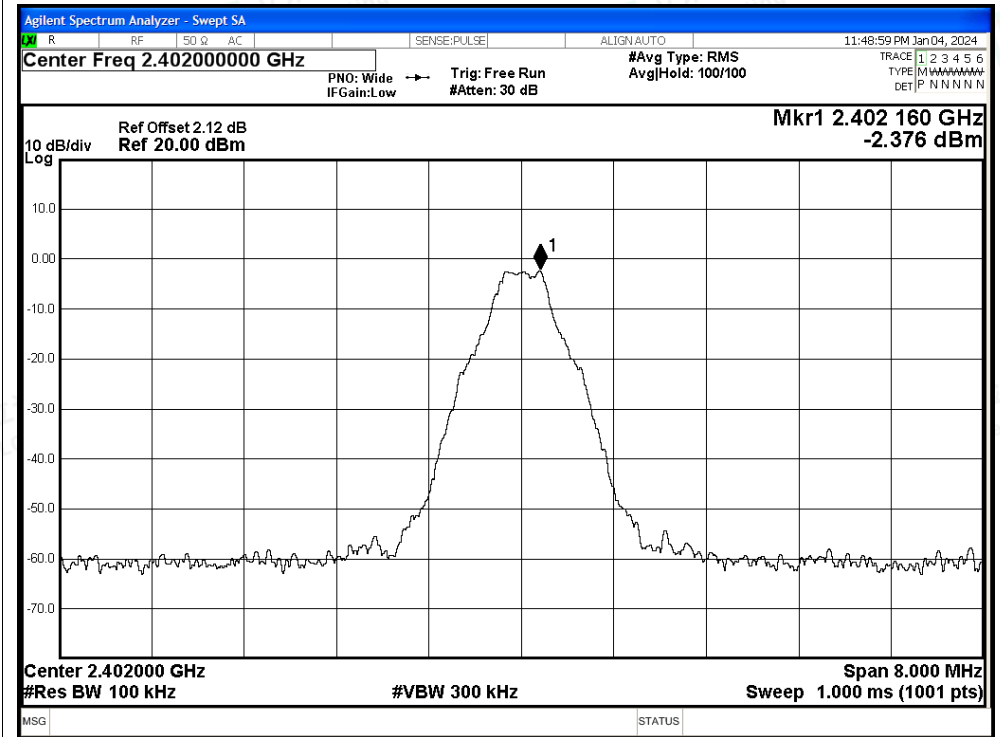




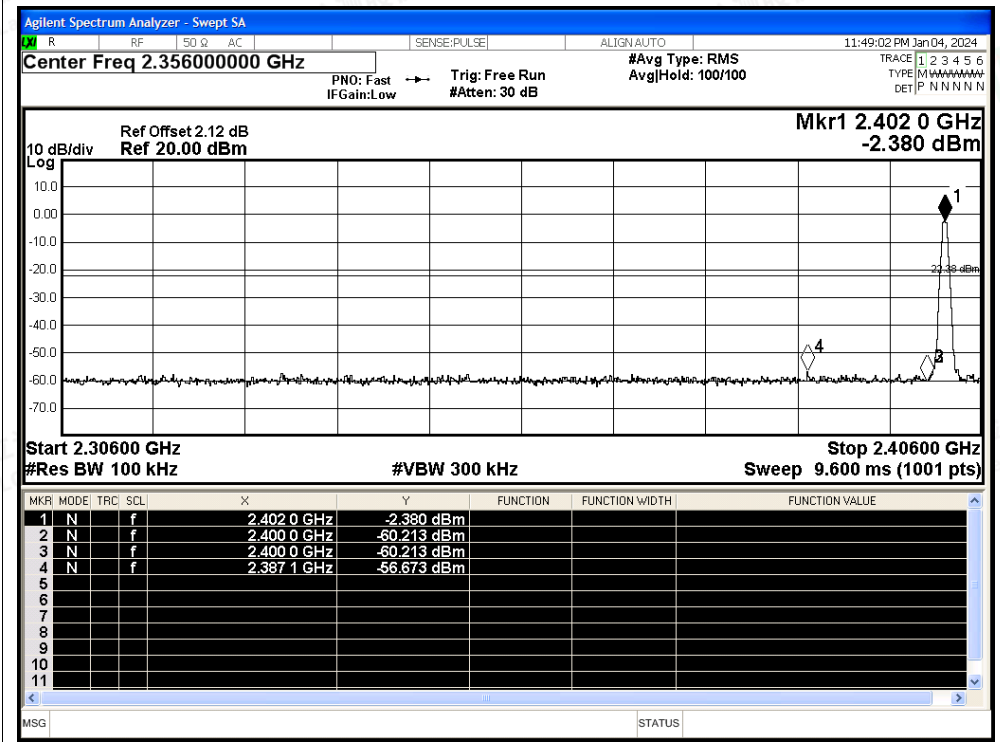


Test Graphs

Band Edge NVNT 1-DH5 2402MHz Ant No-Hopping Ref

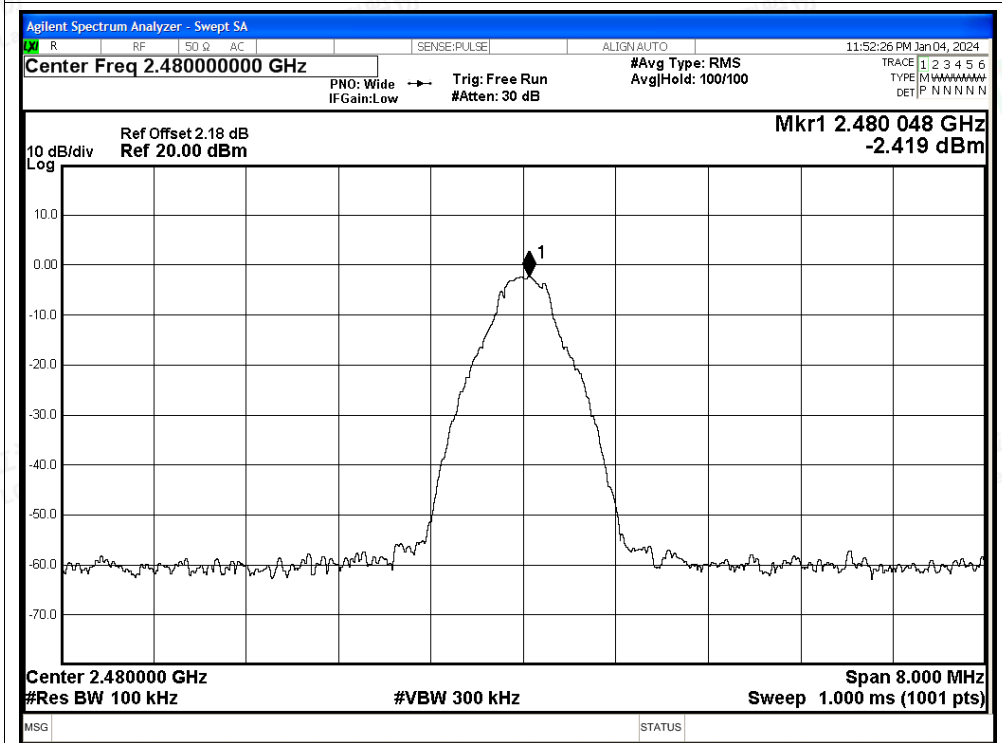


Band Edge NVNT 1-DH5 2402MHz Ant No-Hopping Emission

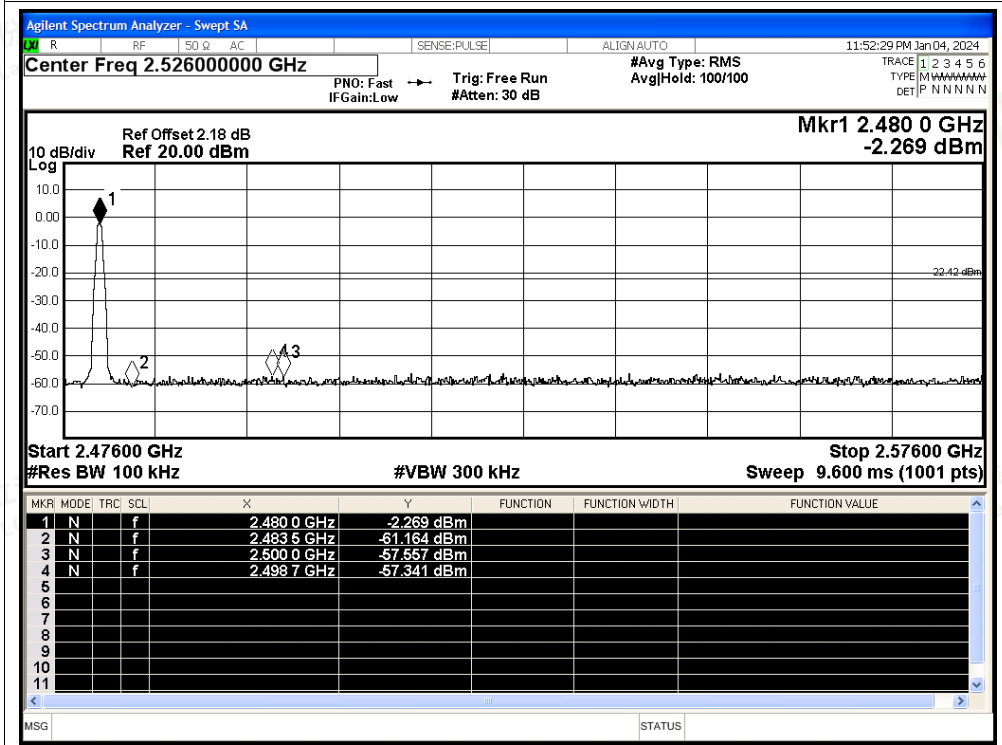




Band Edge NVNT 1-DH5 2480MHz Ant No-Hopping Ref

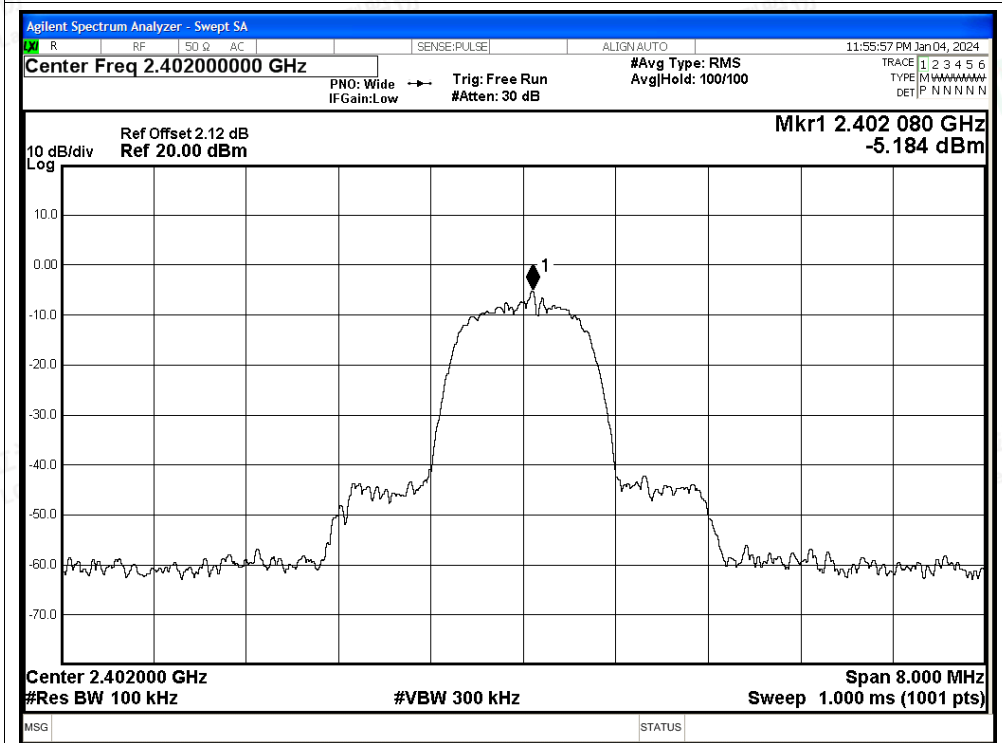


Band Edge NVNT 1-DH5 2480MHz Ant No-Hopping Emission

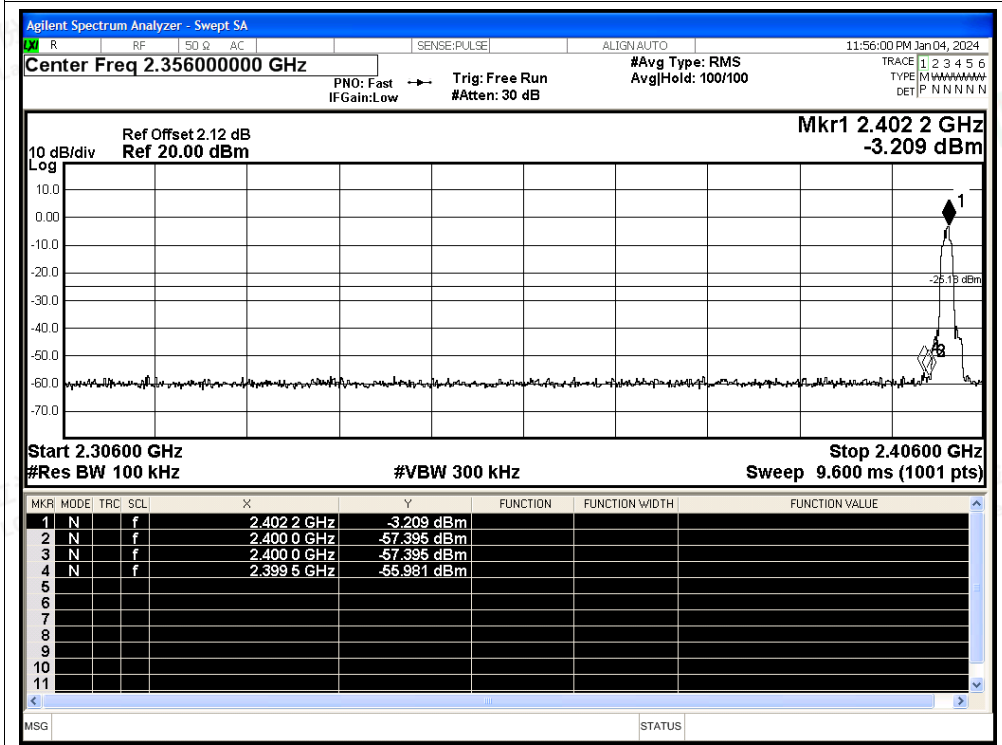




Band Edge NVNT 2-DH5 2402MHz Ant No-Hopping Ref

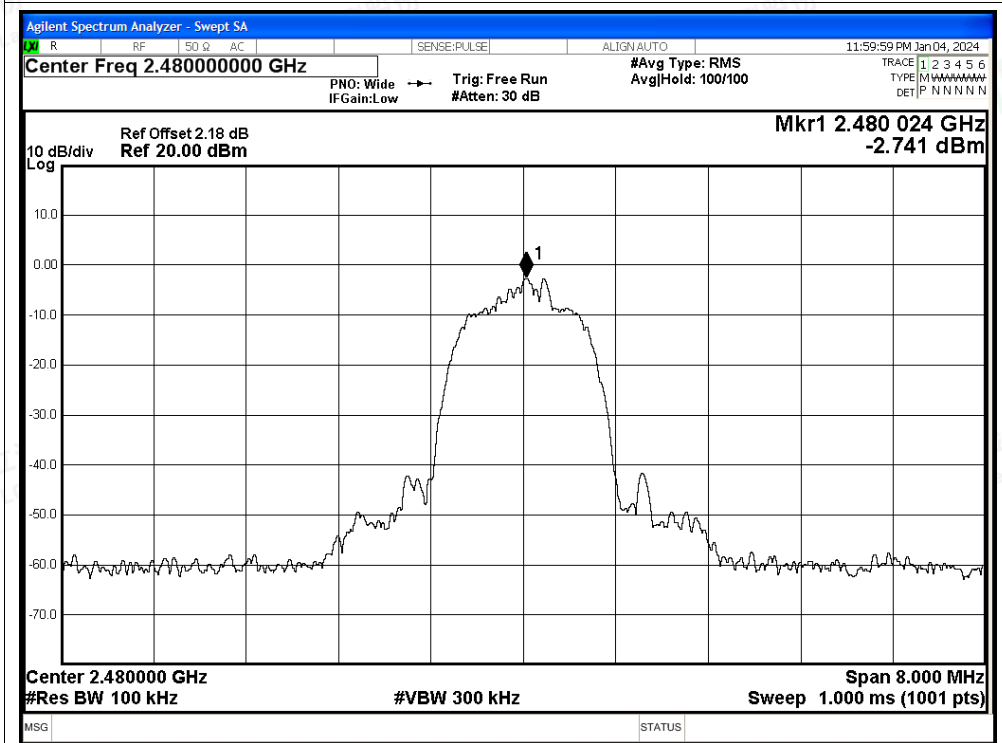


Band Edge NVNT 2-DH5 2402MHz Ant No-Hopping Emission

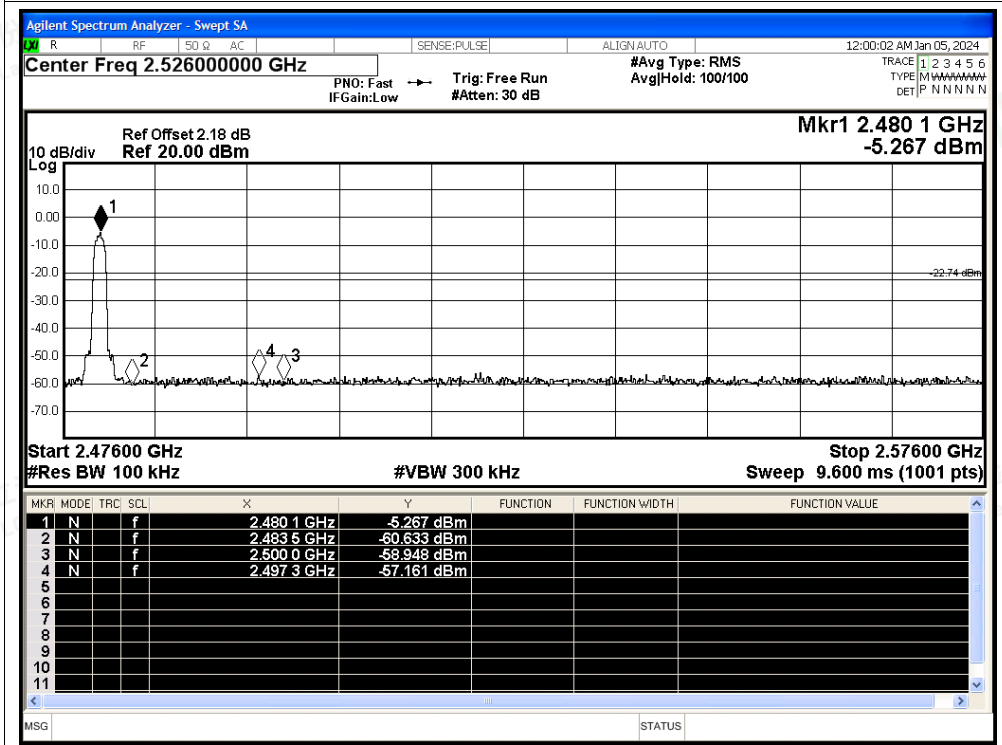




Band Edge NVNT 2-DH5 2480MHz Ant No-Hopping Ref

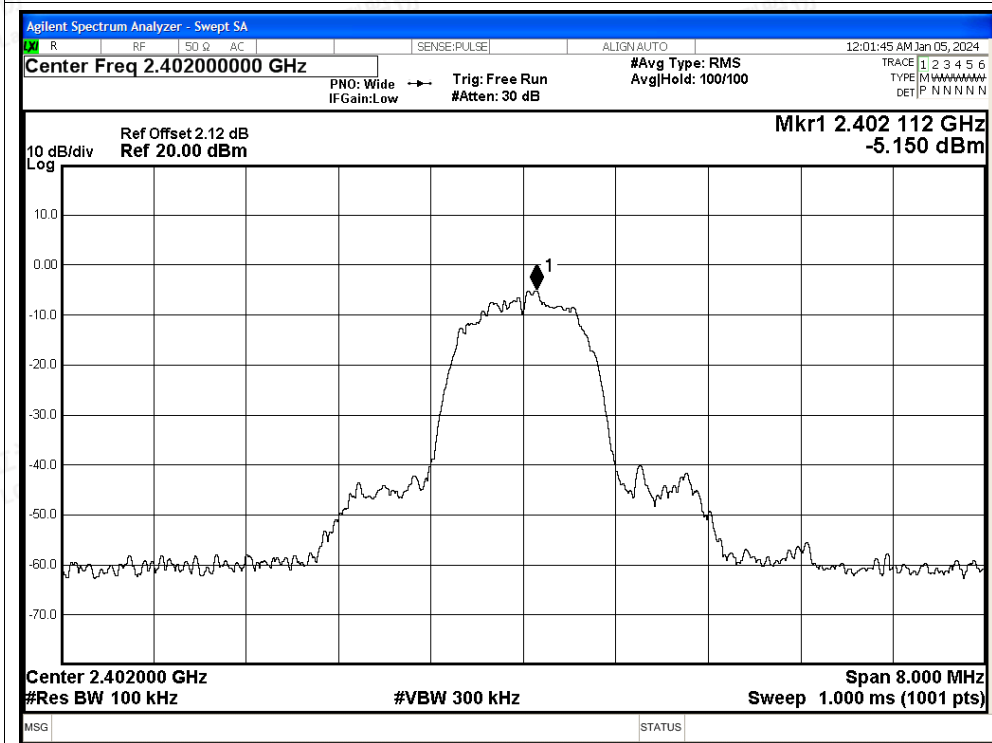


Band Edge NVNT 2-DH5 2480MHz Ant No-Hopping Emission

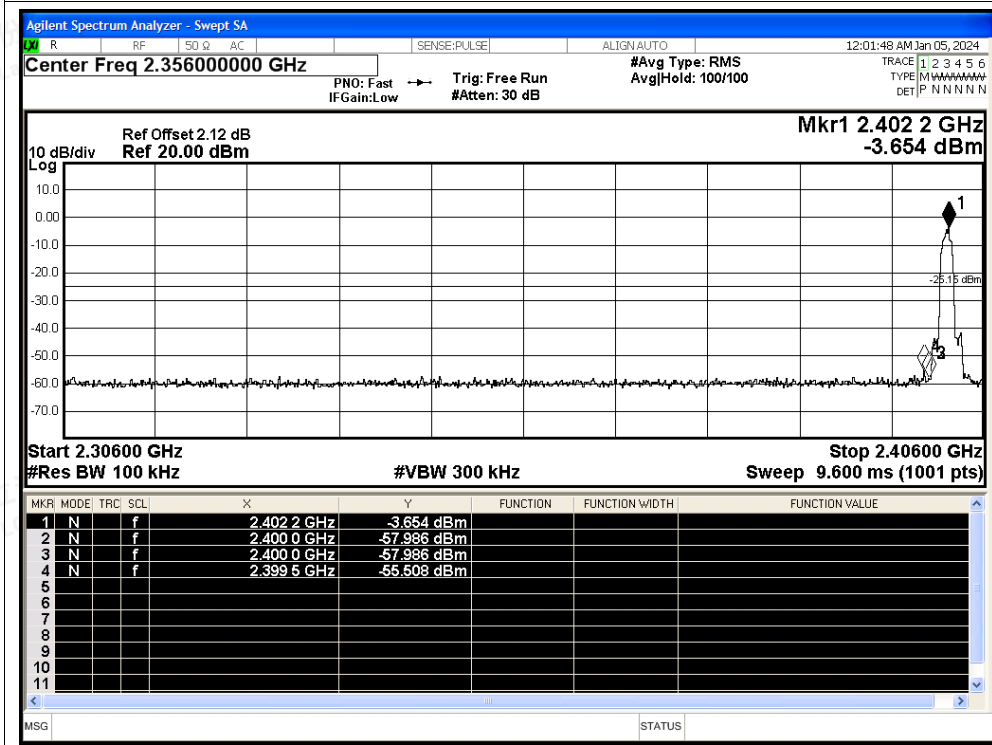




Band Edge NVNT 3-DH5 2402MHz Ant No-Hopping Ref

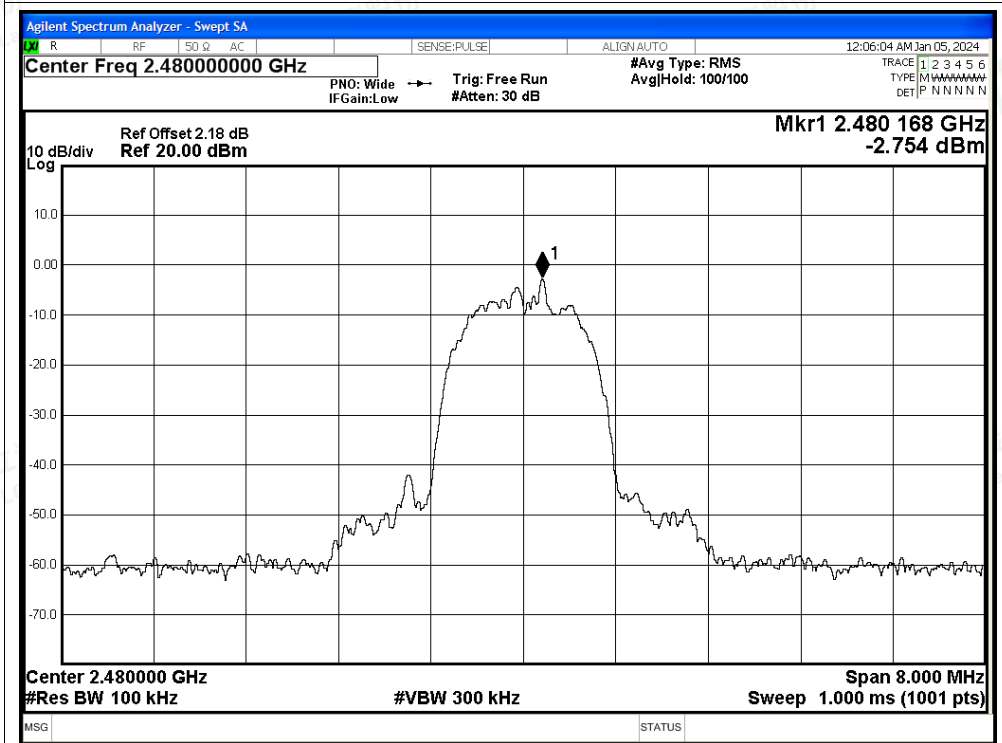


Band Edge NVNT 3-DH5 2402MHz Ant No-Hopping Emission

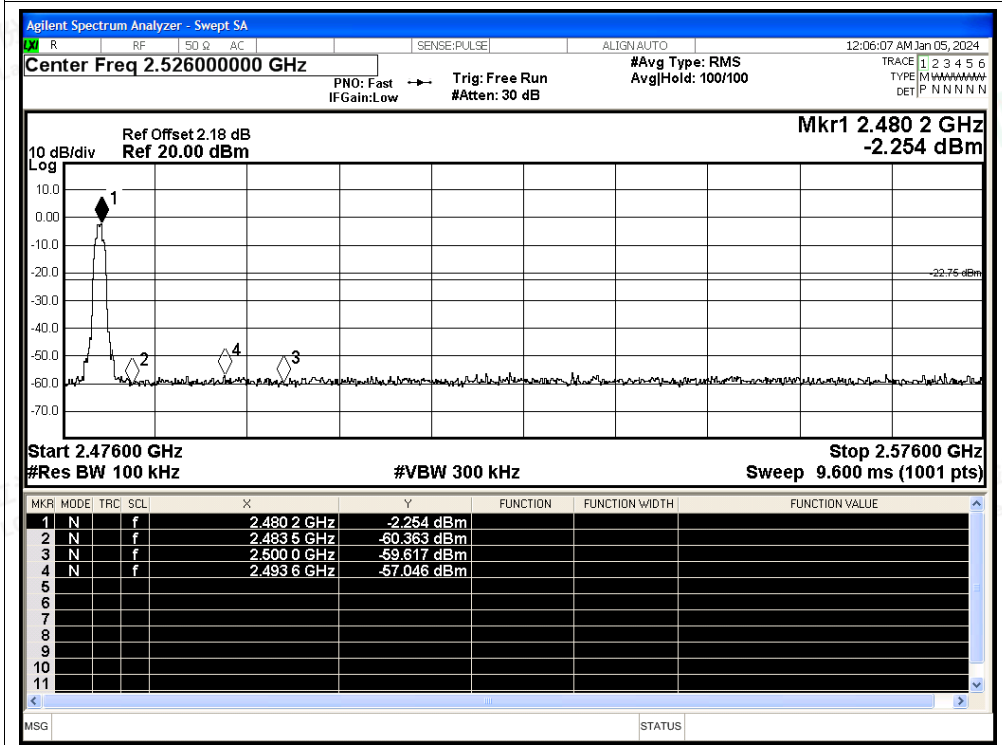




Band Edge NVNT 3-DH5 2480MHz Ant No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant No-Hopping Emission





### (Hopping)

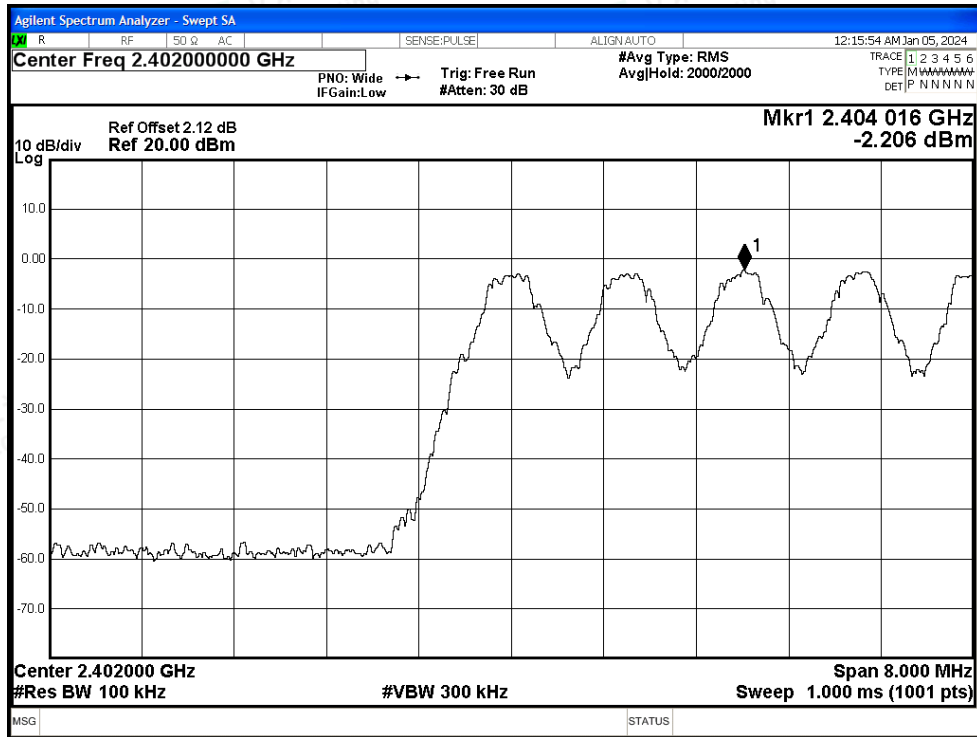
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	Hopping	-54.1	-20	Pass
NVNT	1-DH5	2480	Ant	Hopping	-53.92	-20	Pass
NVNT	2-DH5	2402	Ant	Hopping	-52.17	-20	Pass
NVNT	2-DH5	2480	Ant	Hopping	-52.87	-20	Pass
NVNT	3-DH5	2402	Ant	Hopping	-53.94	-20	Pass
NVNT	3-DH5	2480	Ant	Hopping	-53.68	-20	Pass



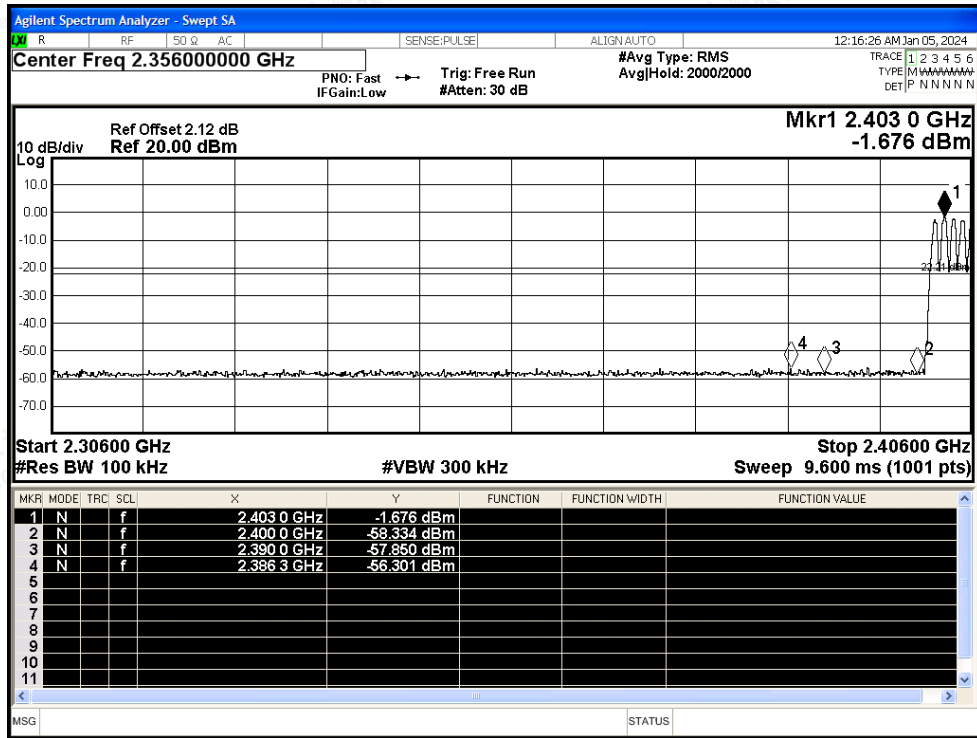


Test Graphs

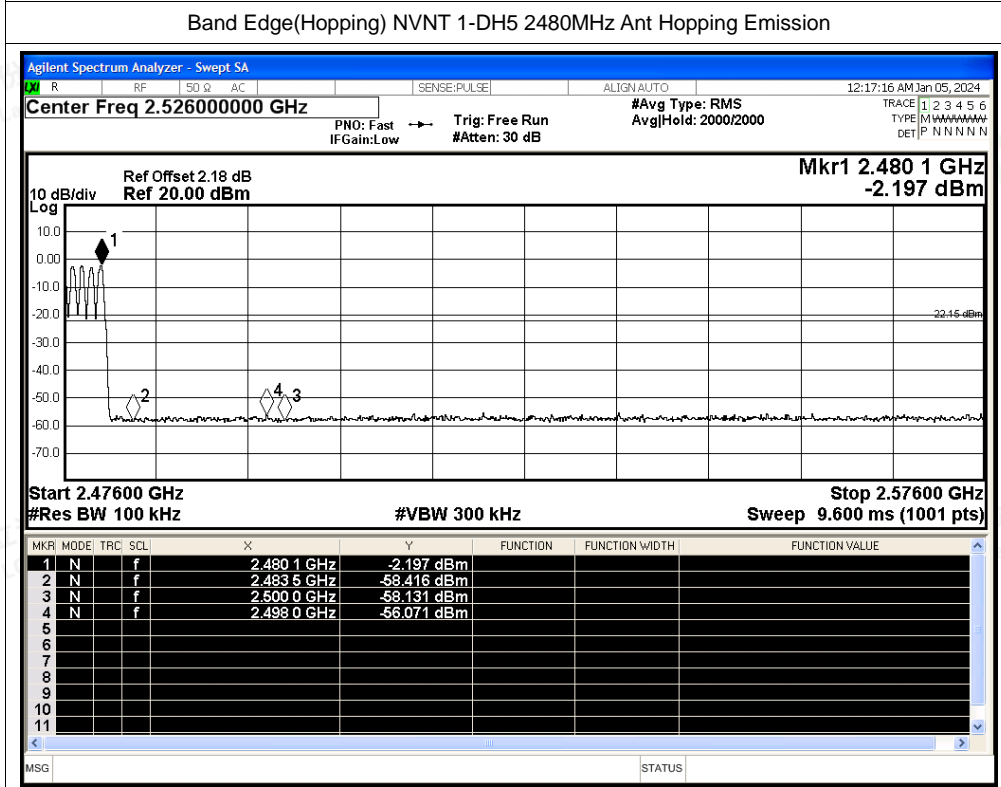
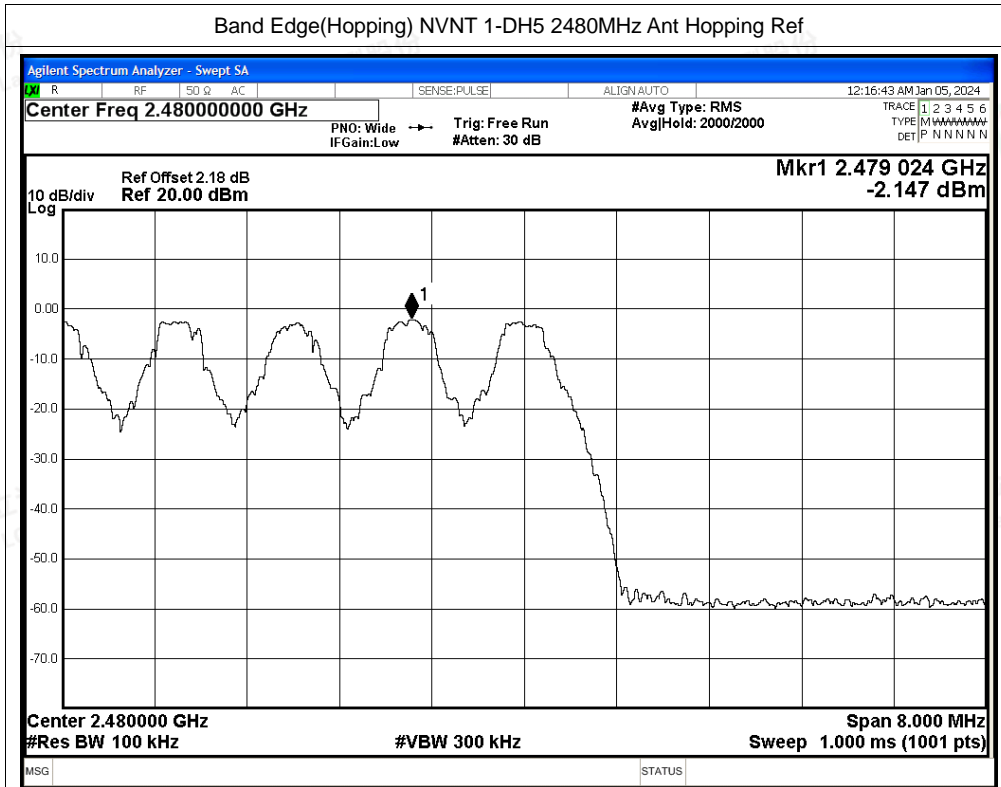
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant Hopping Ref



Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant Hopping Emission





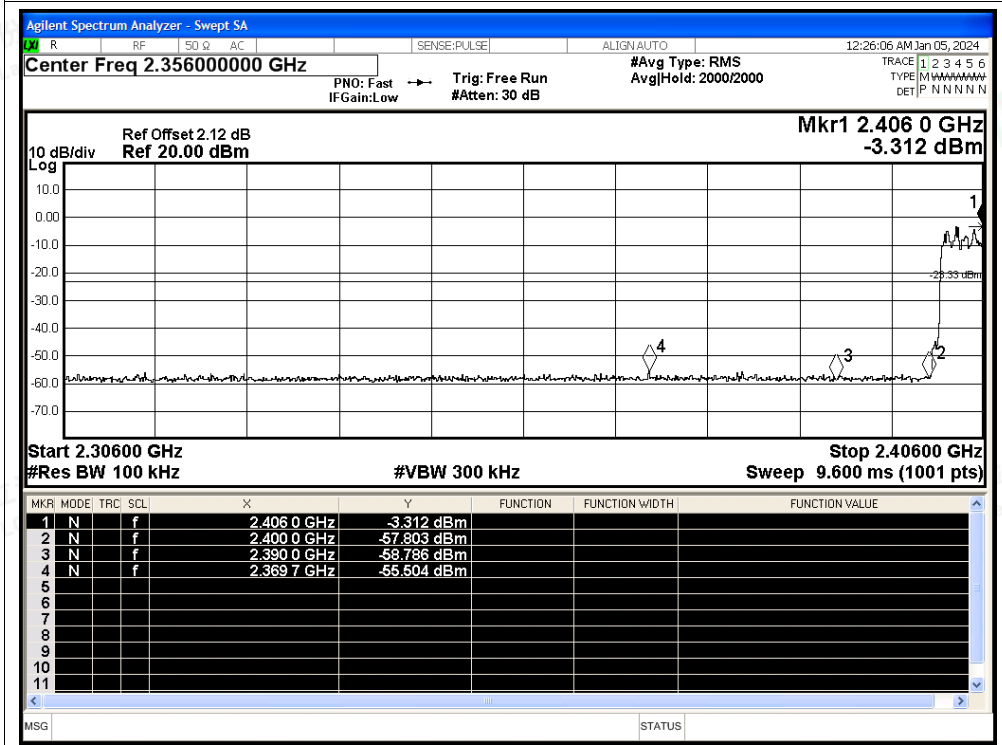




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant Hopping Ref

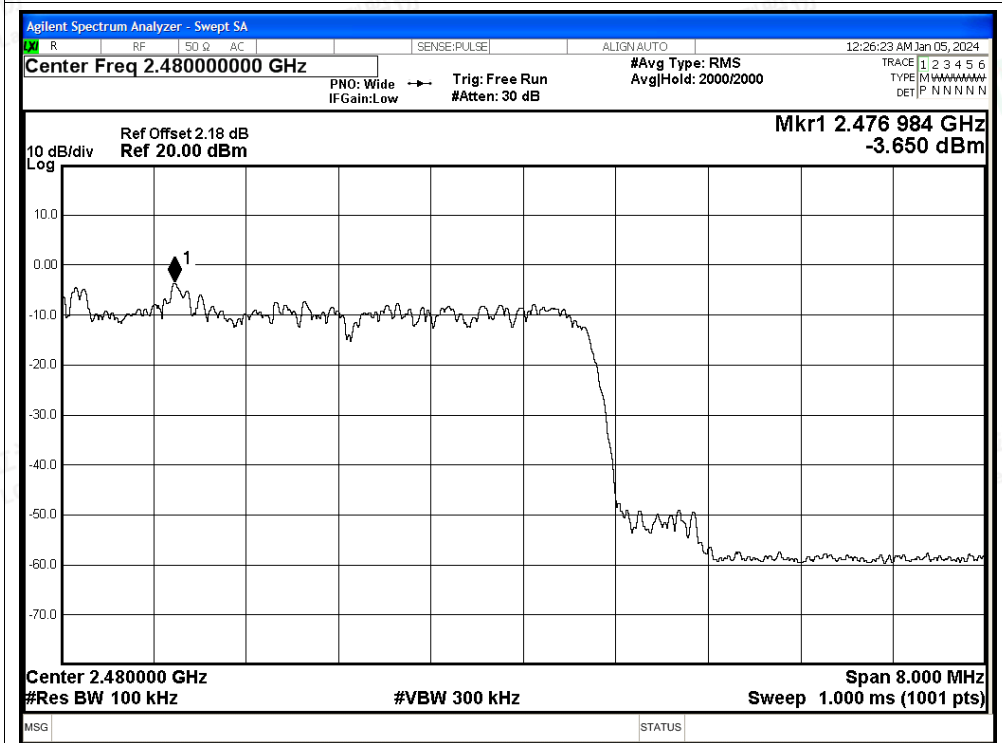


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant Hopping Emission

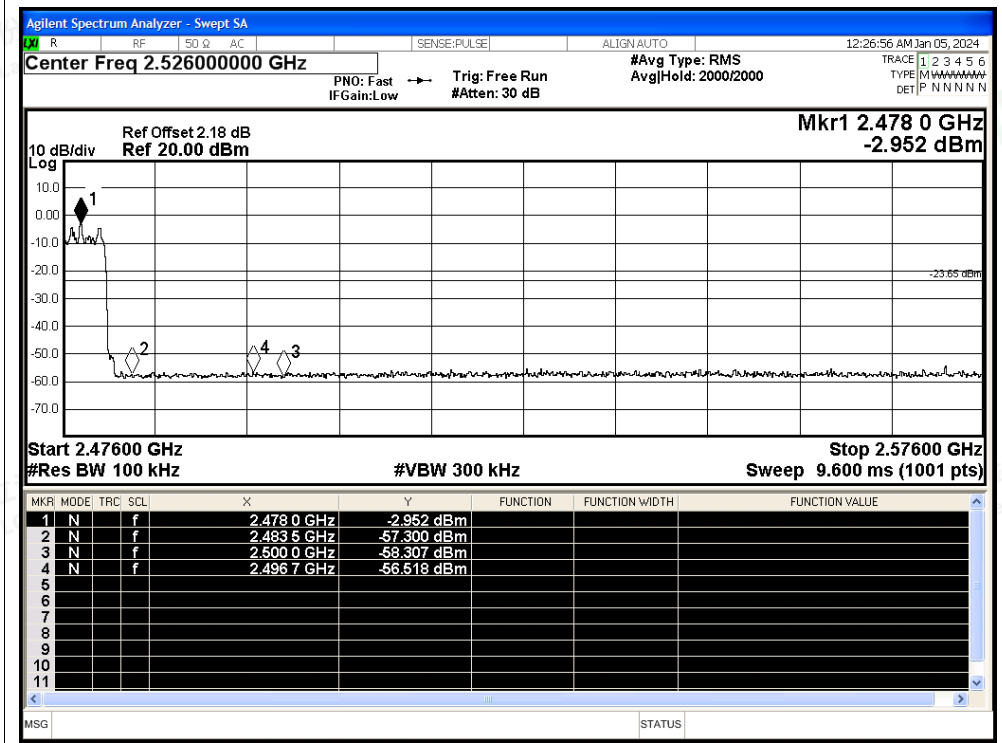




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant Hopping Ref

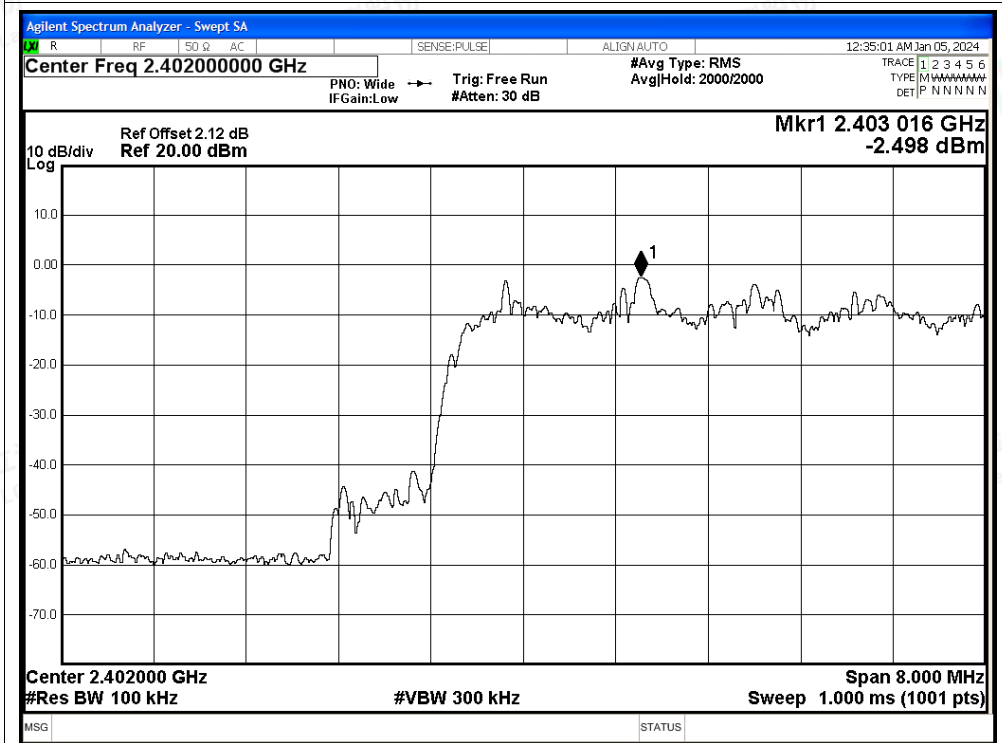


Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant Hopping Emission

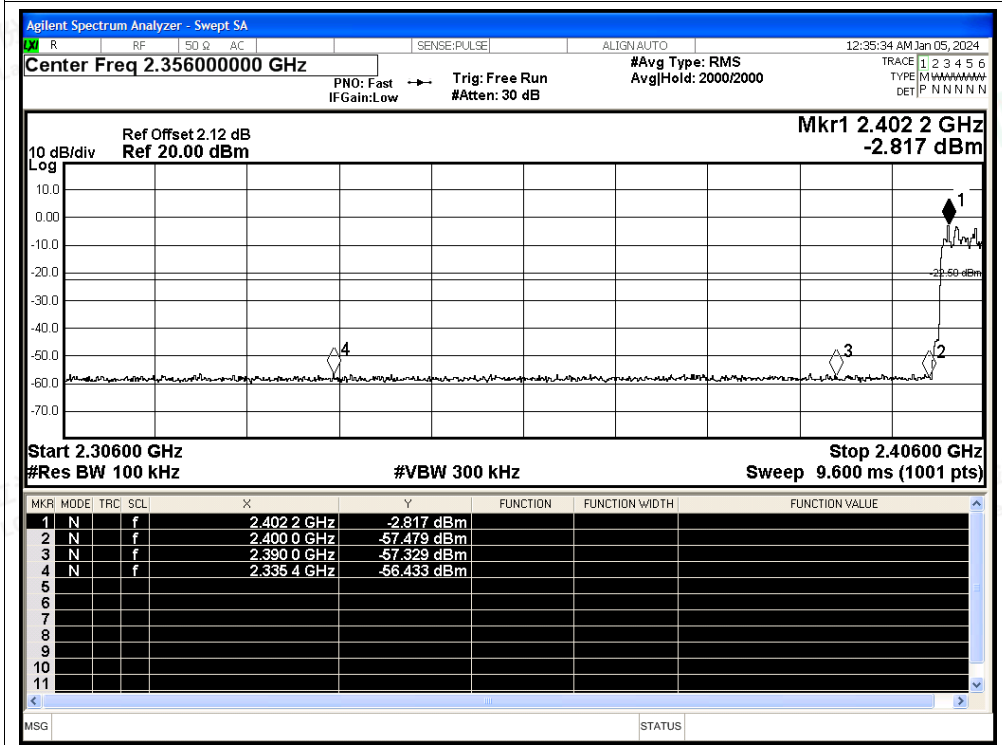




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant Hopping Ref

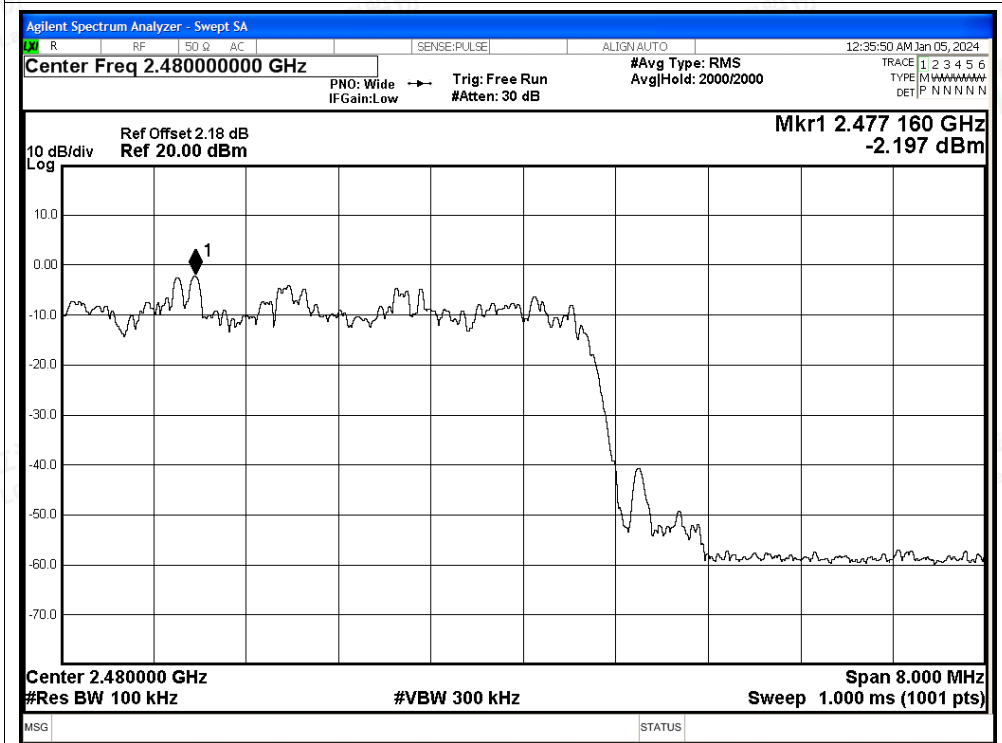


Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant Hopping Emission

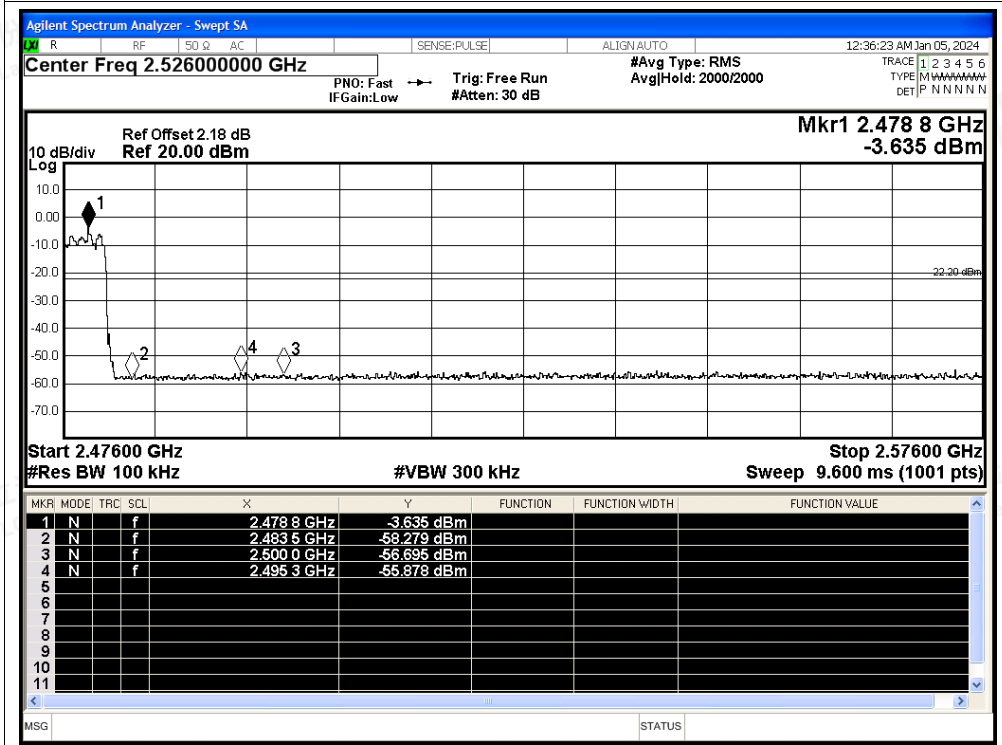




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant Hopping Emission





## A.7 Conducted RF Spurious Emission

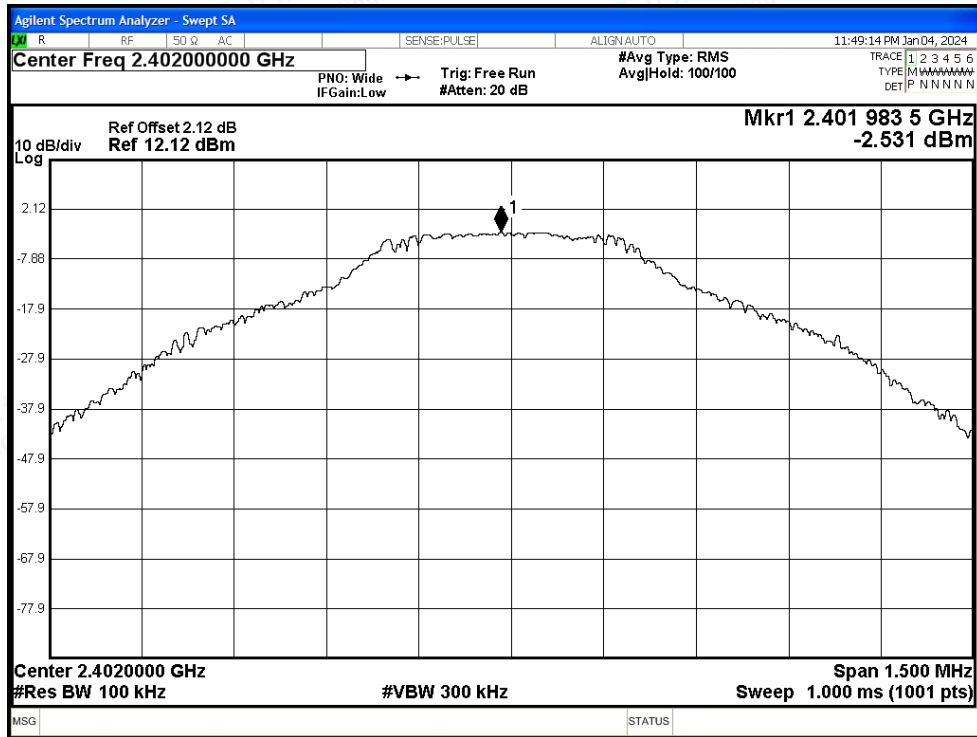
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	-53.41	-20	Pass
NVNT	1-DH5	2441	Ant	-51.94	-20	Pass
NVNT	1-DH5	2480	Ant	-52.42	-20	Pass
NVNT	2-DH5	2402	Ant	-52.78	-20	Pass
NVNT	2-DH5	2441	Ant	-51.77	-20	Pass
NVNT	2-DH5	2480	Ant	-52.86	-20	Pass
NVNT	3-DH5	2402	Ant	-52.17	-20	Pass
NVNT	3-DH5	2441	Ant	-51.55	-20	Pass
NVNT	3-DH5	2480	Ant	-50.96	-20	Pass



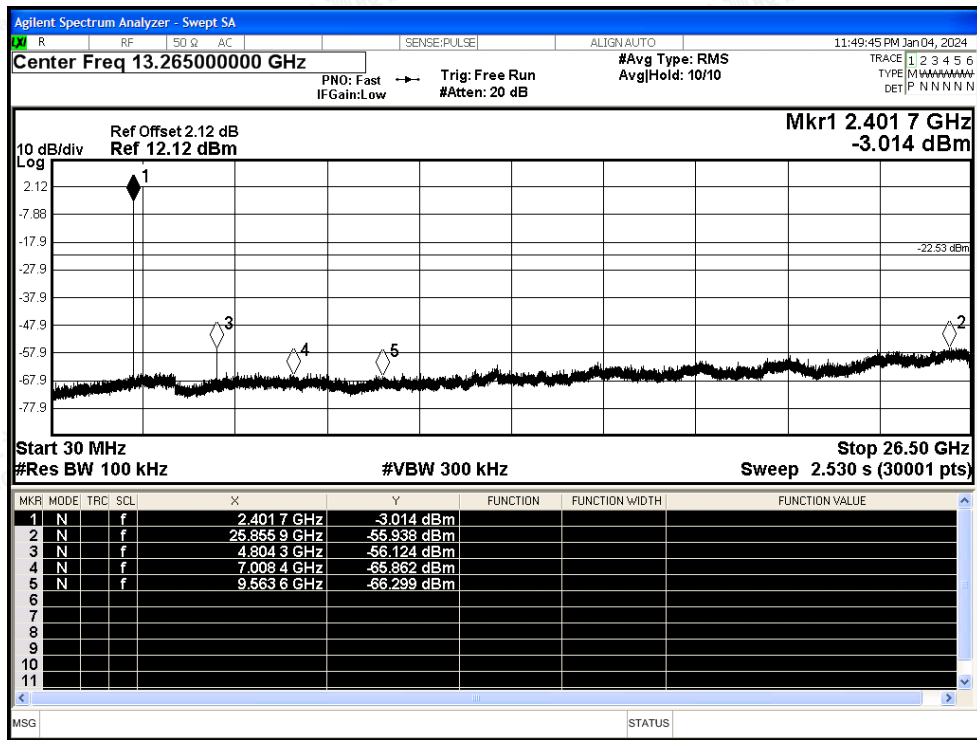


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant Ref

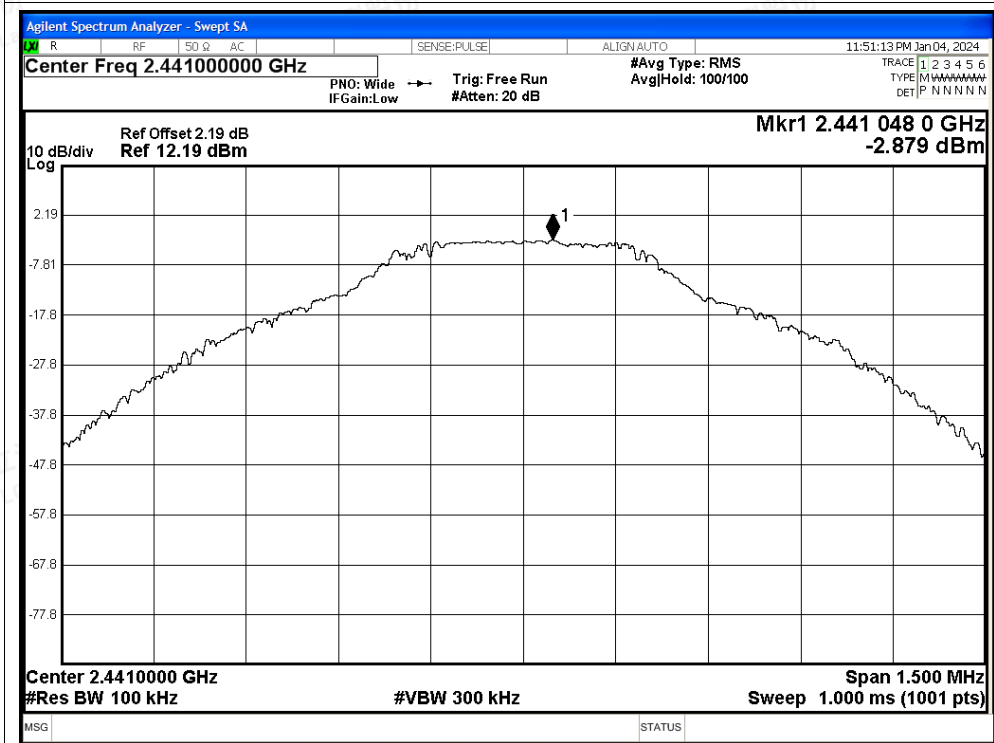


Tx. Spurious NVNT 1-DH5 2402MHz Ant Emission

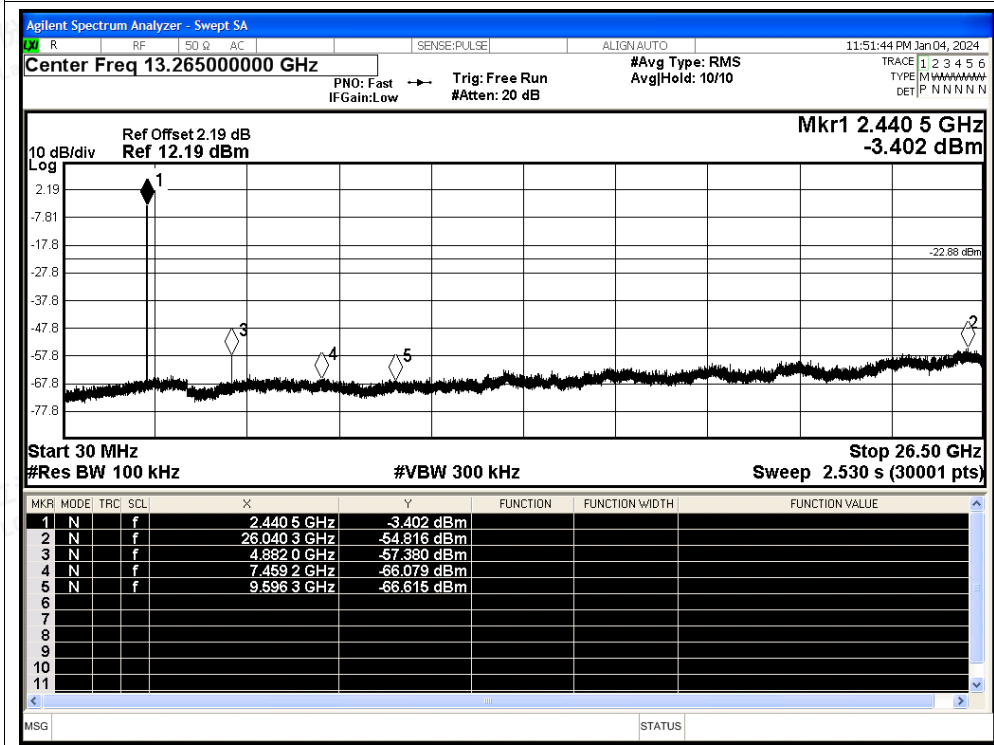




Tx. Spurious NVNT 1-DH5 2441MHz Ant Ref



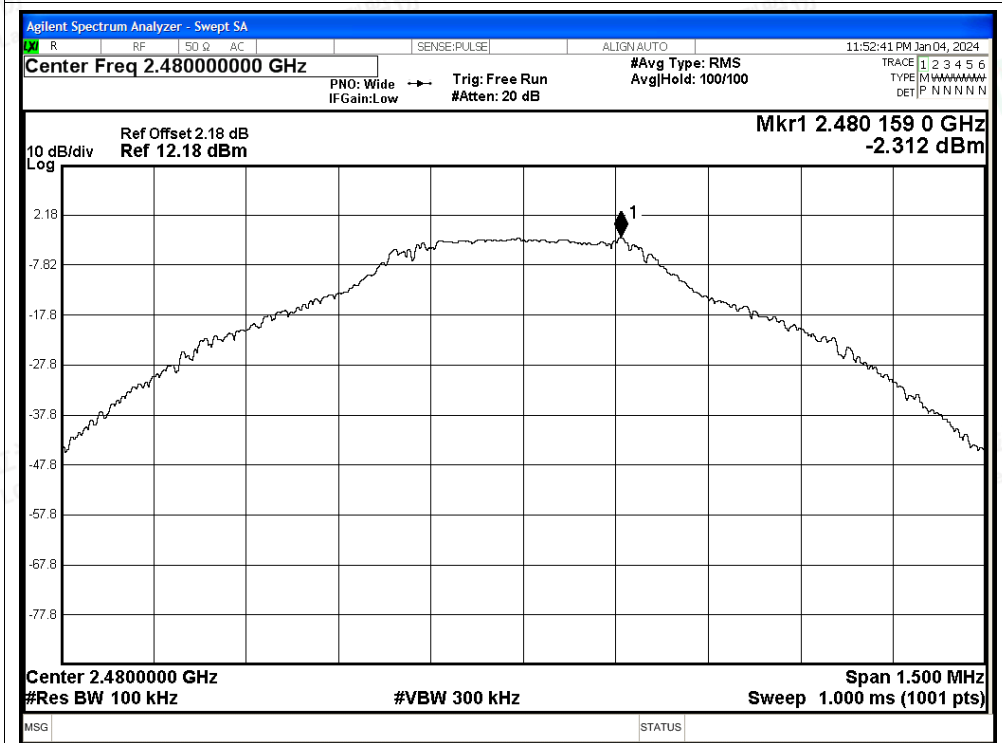
Tx. Spurious NVNT 1-DH5 2441MHz Ant Emission



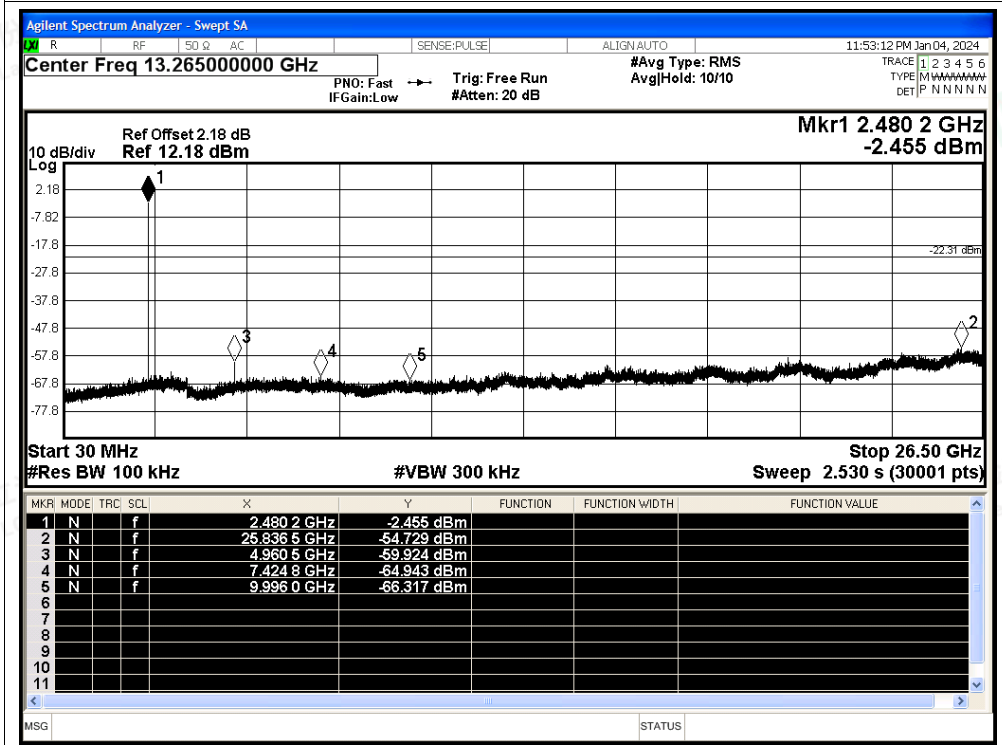




Tx. Spurious NVNT 1-DH5 2480MHz Ant Ref

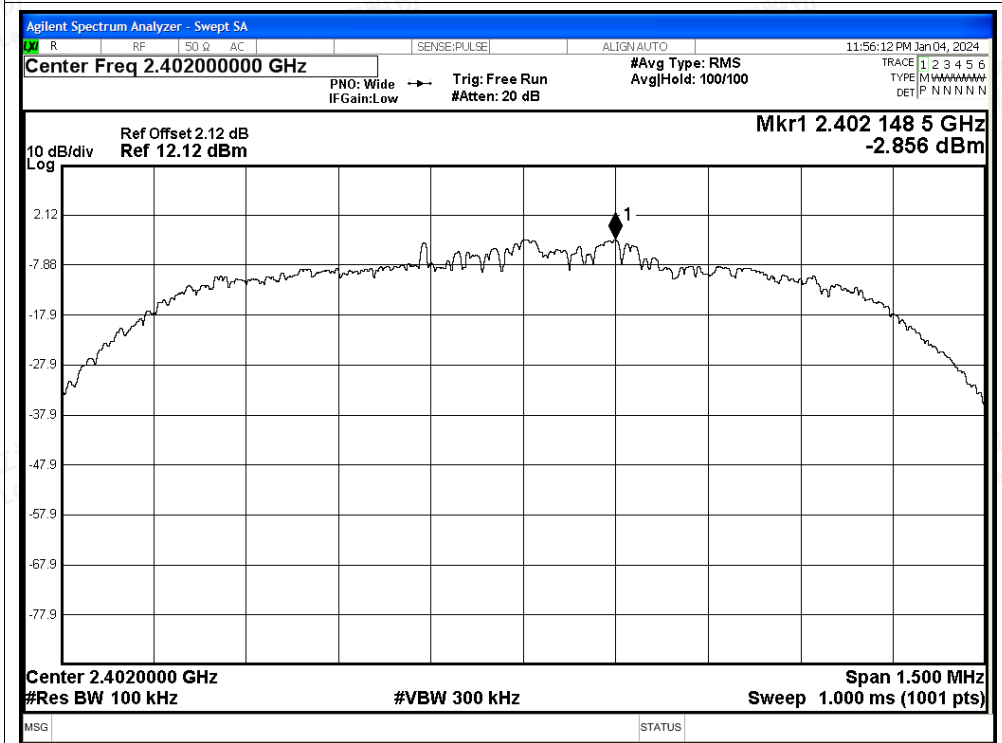


Tx. Spurious NVNT 1-DH5 2480MHz Ant Emission

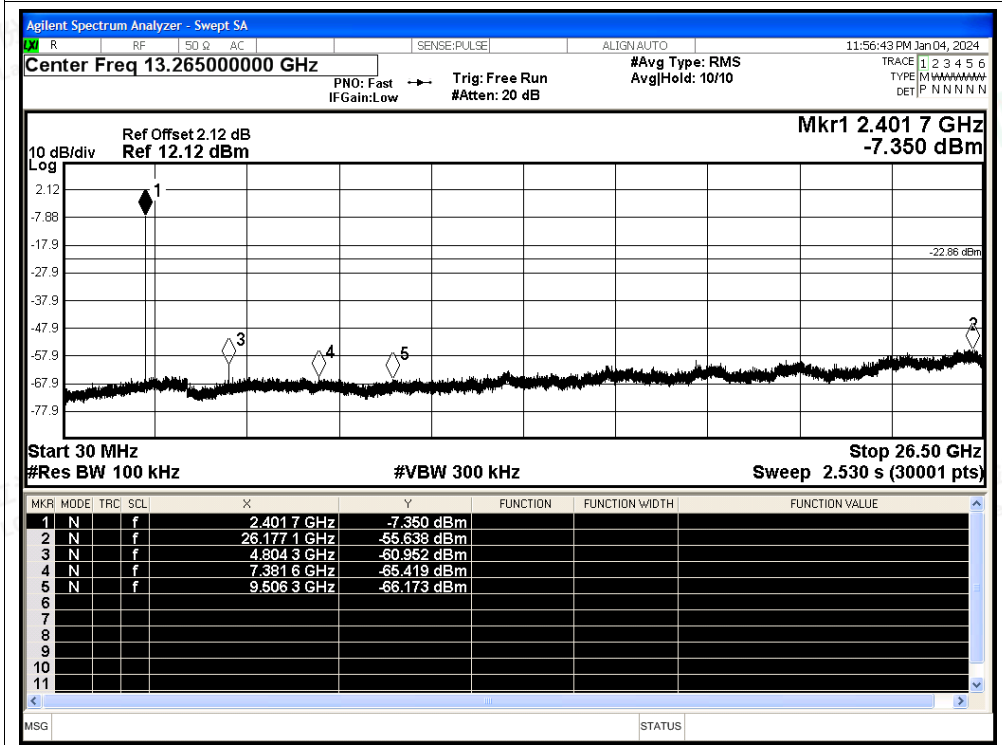




Tx. Spurious NVNT 2-DH5 2402MHz Ant Ref

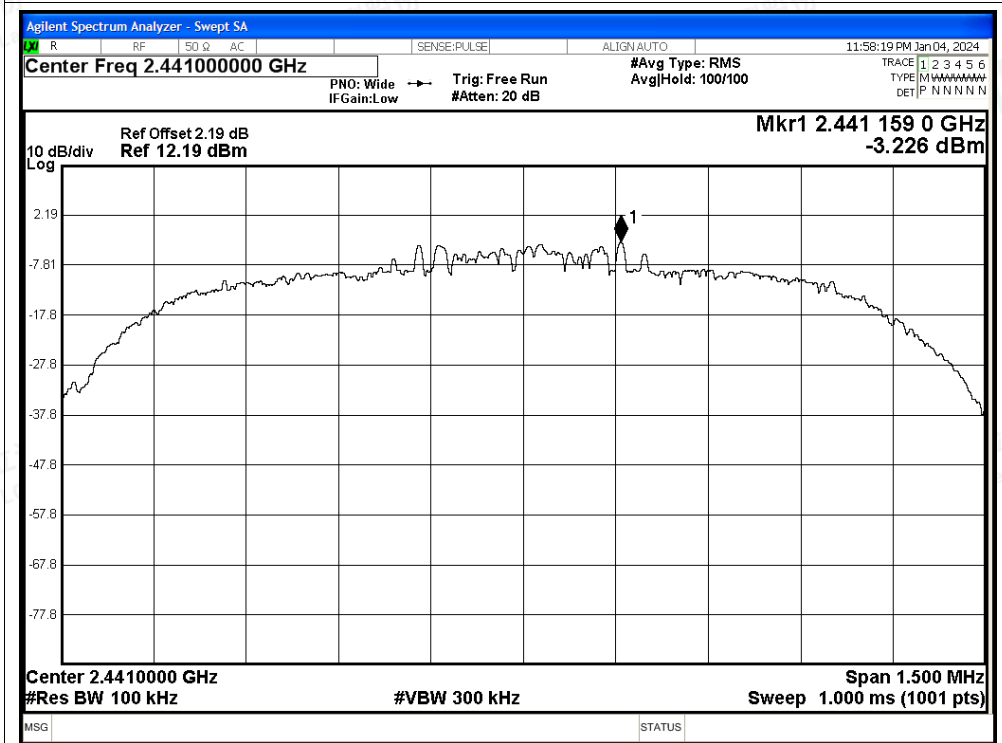


Tx. Spurious NVNT 2-DH5 2402MHz Ant Emission

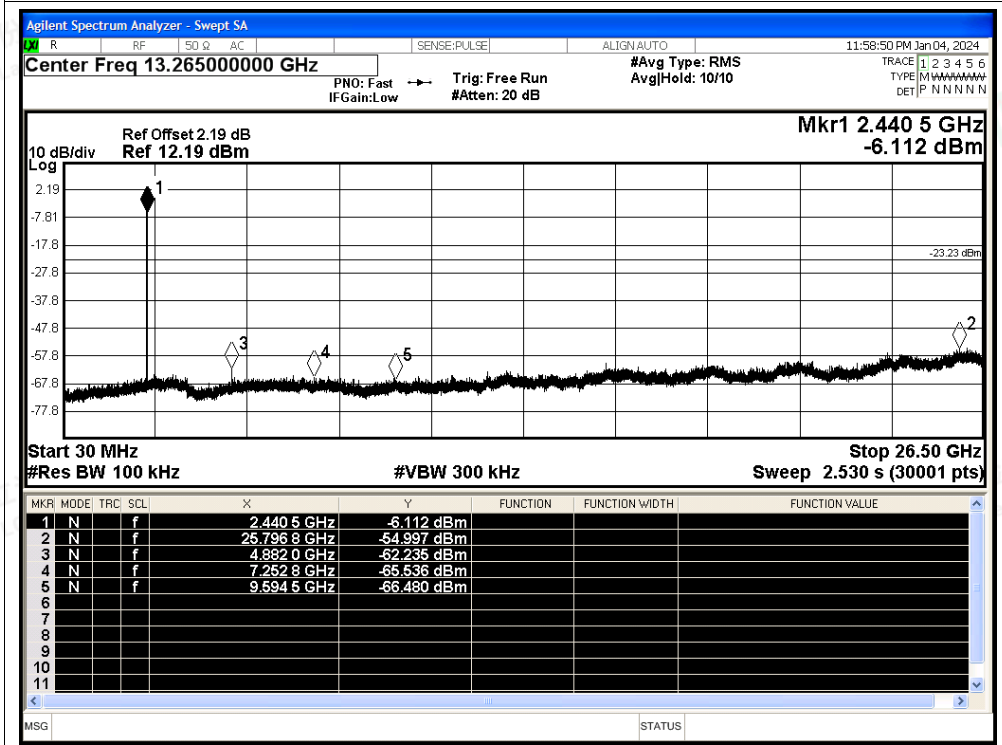




Tx. Spurious NVNT 2-DH5 2441MHz Ant Ref

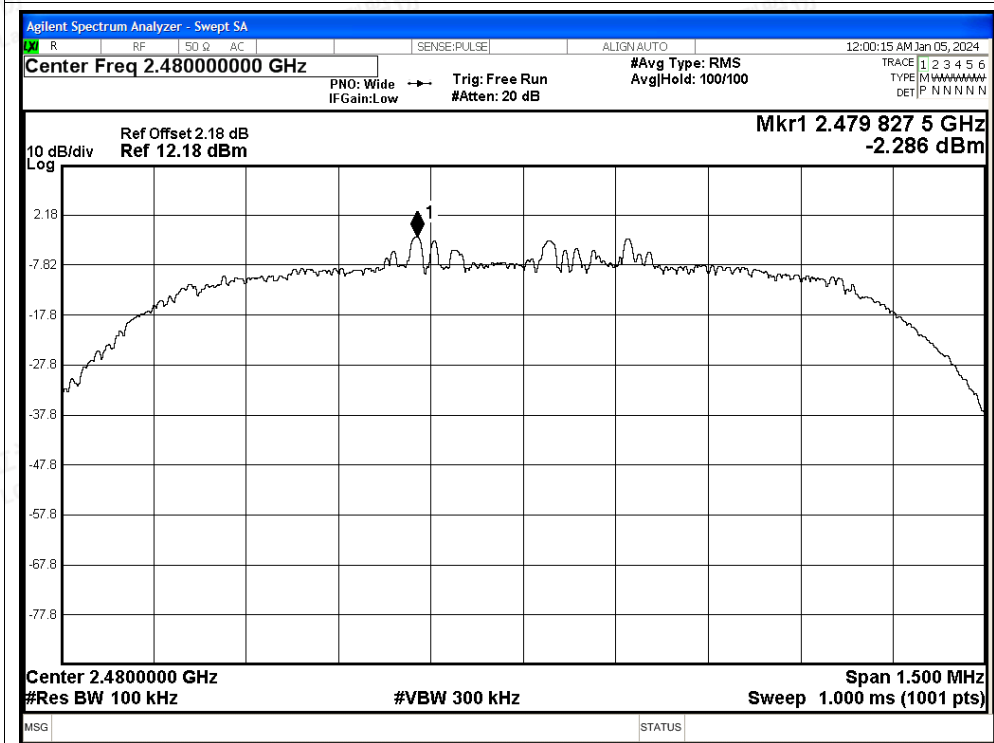


Tx. Spurious NVNT 2-DH5 2441MHz Ant Emission

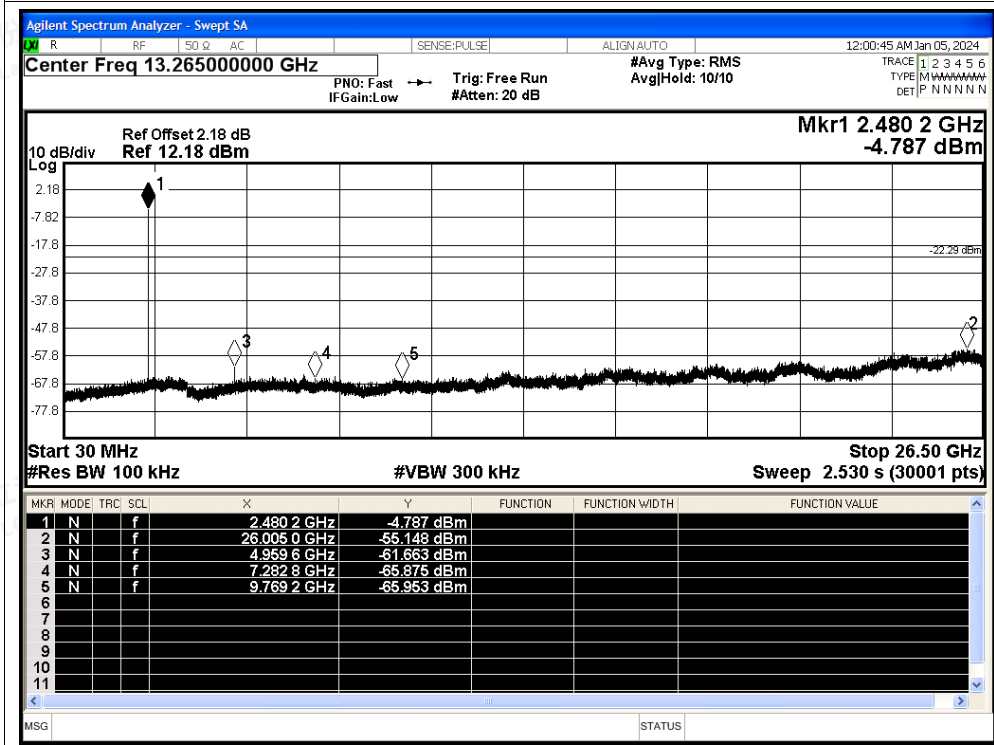




Tx. Spurious NVNT 2-DH5 2480MHz Ant Ref

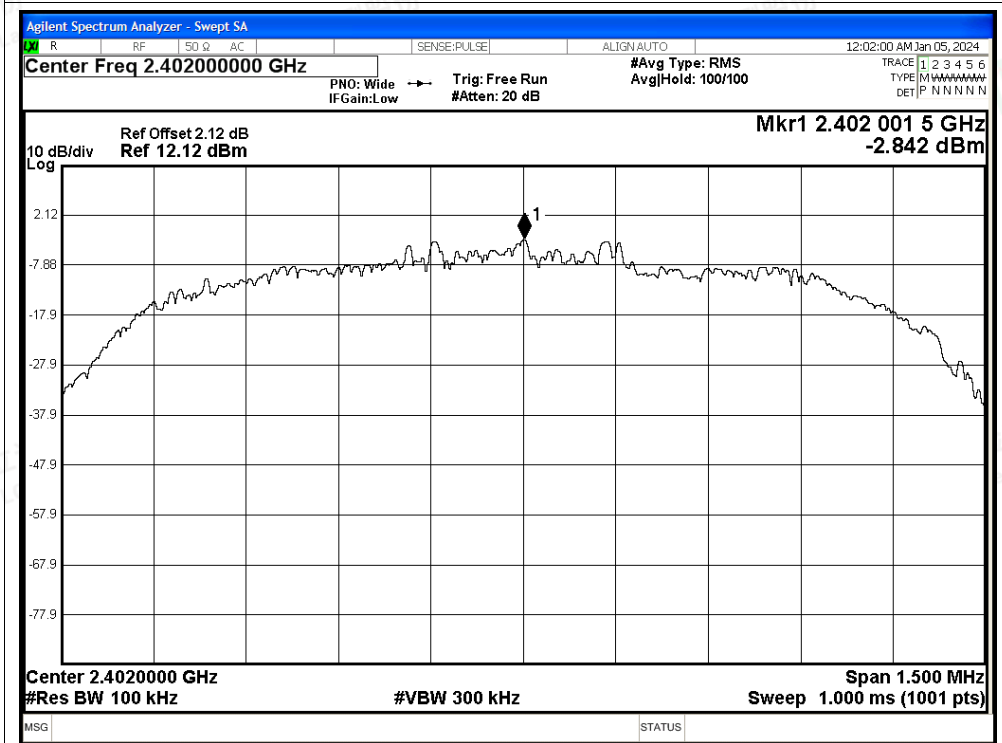


Tx. Spurious NVNT 2-DH5 2480MHz Ant Emission

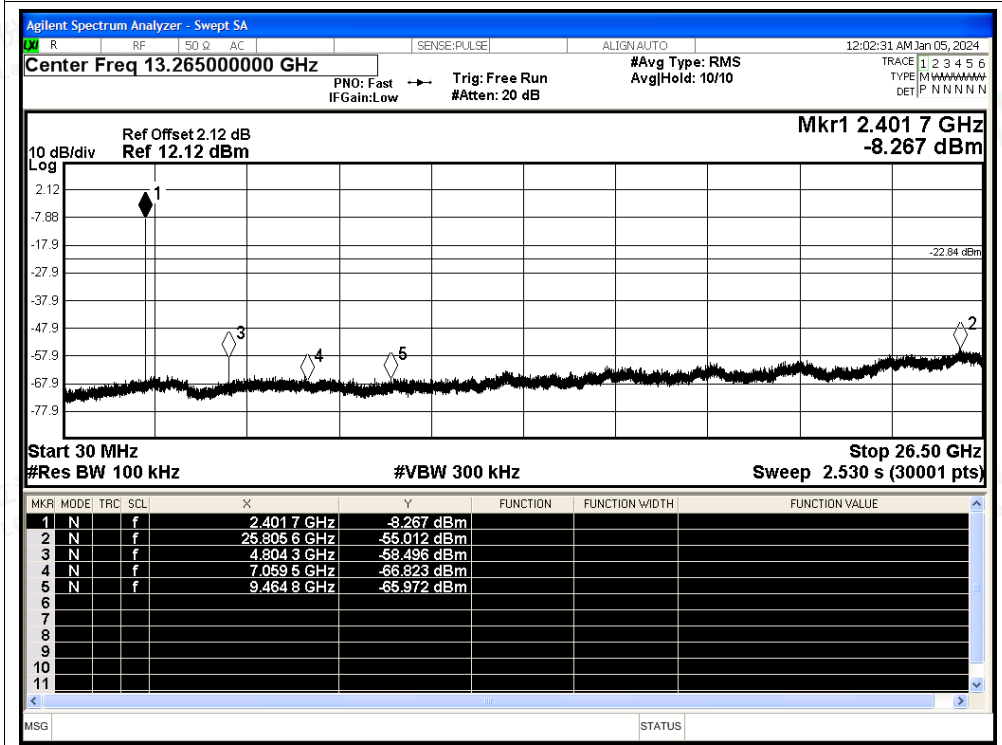




Tx. Spurious NVNT 3-DH5 2402MHz Ant Ref

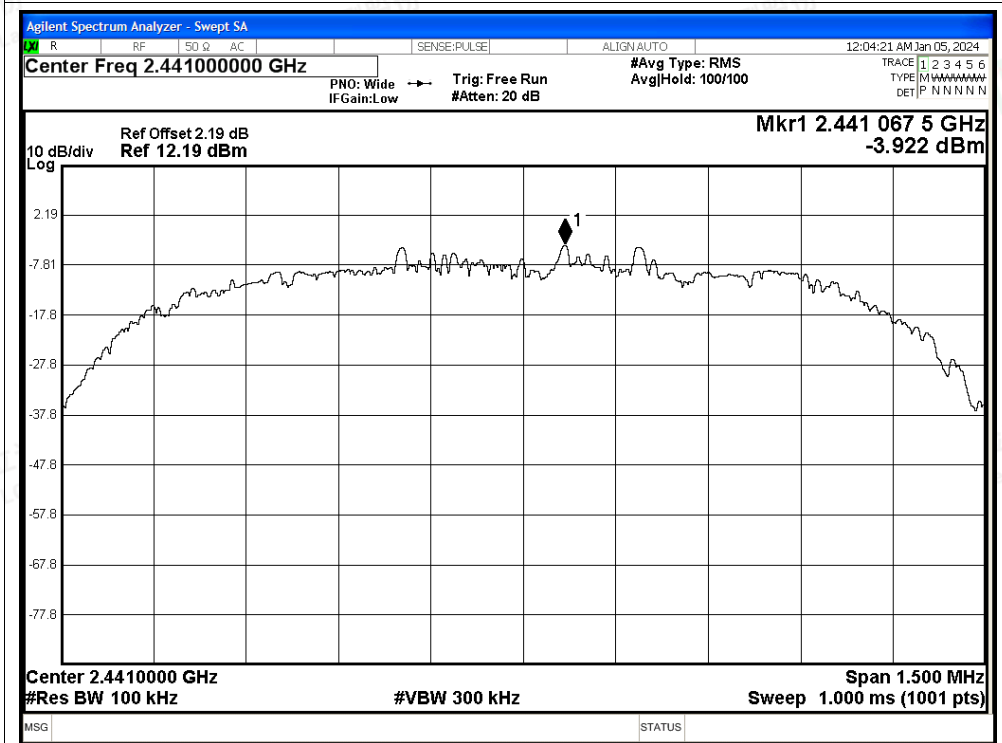


Tx. Spurious NVNT 3-DH5 2402MHz Ant Emission

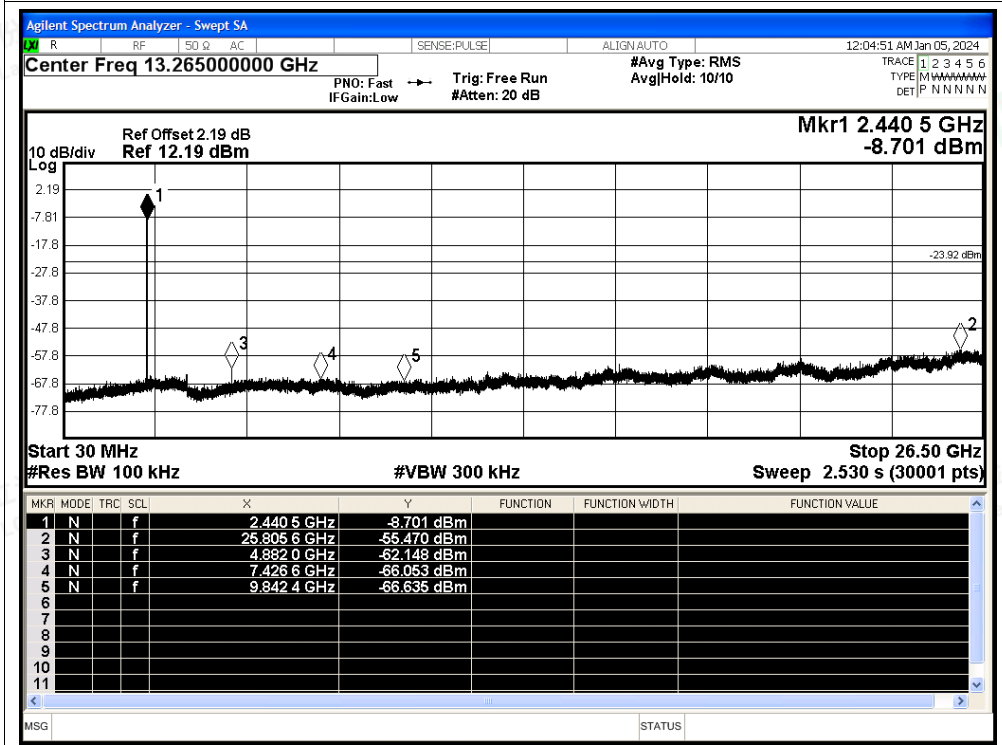




Tx. Spurious NVNT 3-DH5 2441MHz Ant Ref

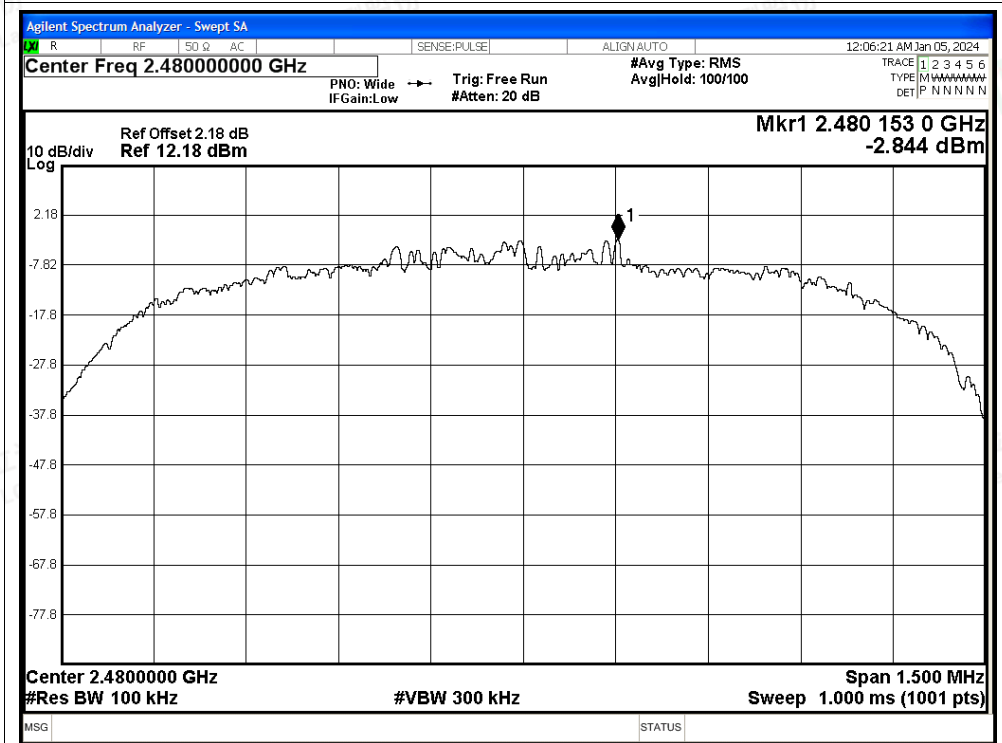


Tx. Spurious NVNT 3-DH5 2441MHz Ant Emission

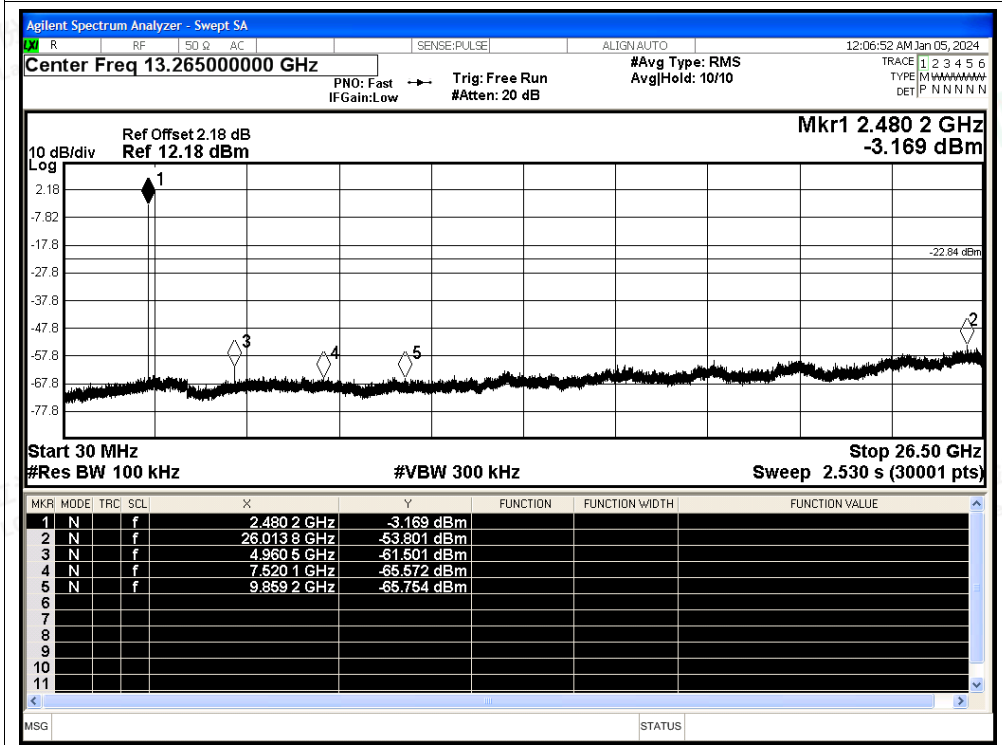




Tx. Spurious NVNT 3-DH5 2480MHz Ant Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant Emission





## A.8 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant	76.88	1.14	0.35
NVNT	1-DH5	2441	Ant	76.88	1.14	0.35
NVNT	1-DH5	2480	Ant	76.91	1.14	0.35
NVNT	2-DH5	2402	Ant	76.96	1.14	0.35
NVNT	2-DH5	2441	Ant	76.96	1.14	0.35
NVNT	2-DH5	2480	Ant	76.99	1.14	0.35
NVNT	3-DH5	2402	Ant	77.01	1.13	0.35
NVNT	3-DH5	2441	Ant	77.01	1.13	0.35
NVNT	3-DH5	2480	Ant	77.01	1.13	0.35

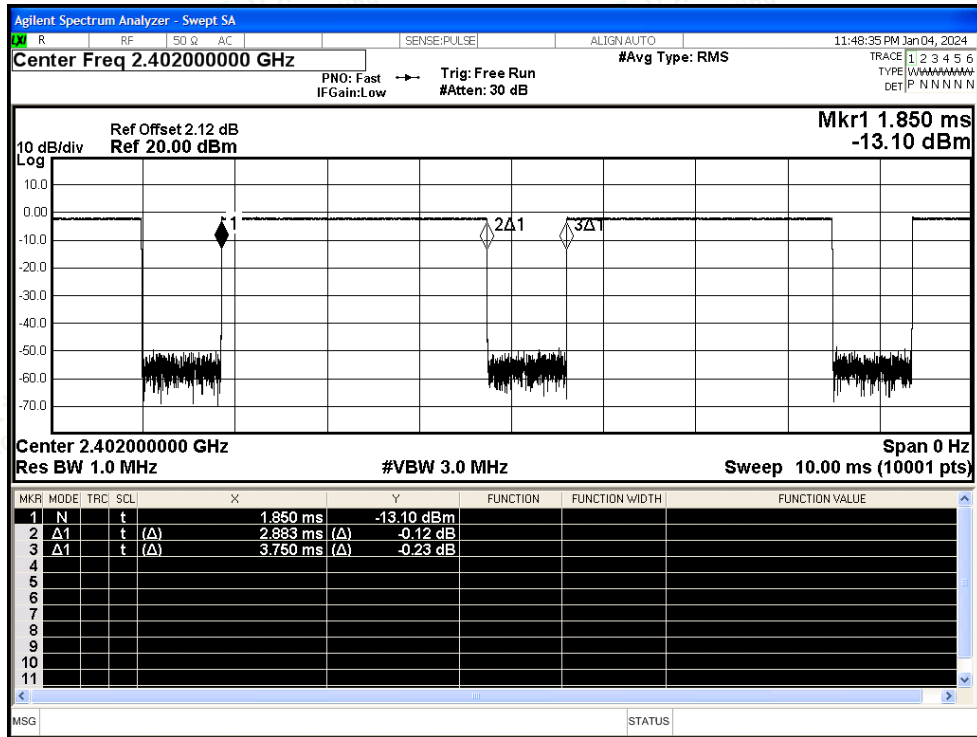




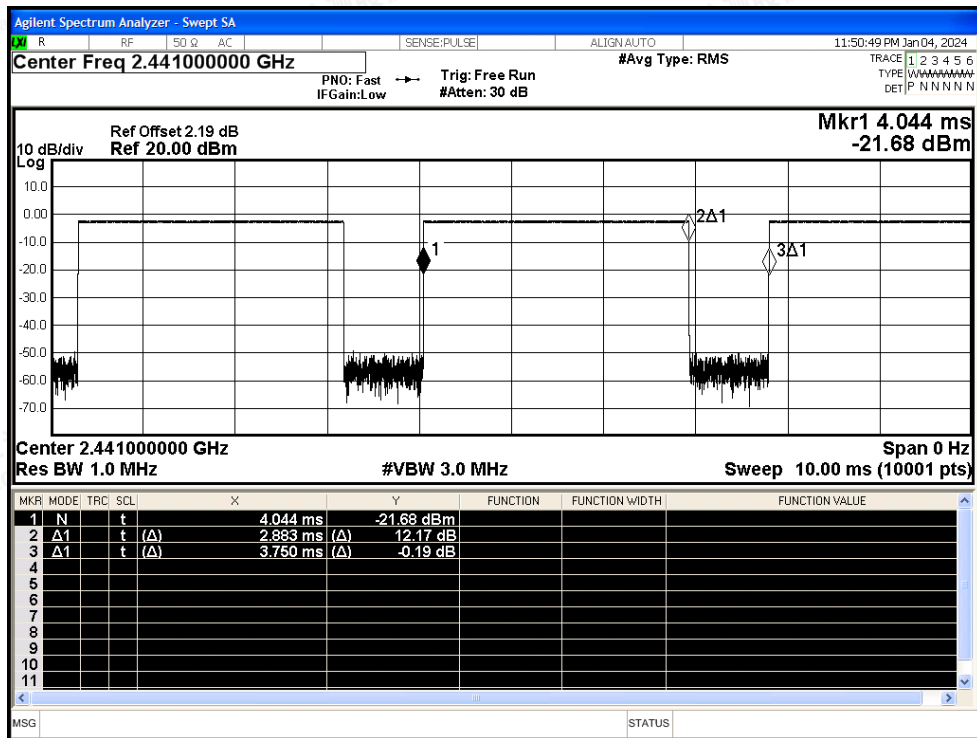


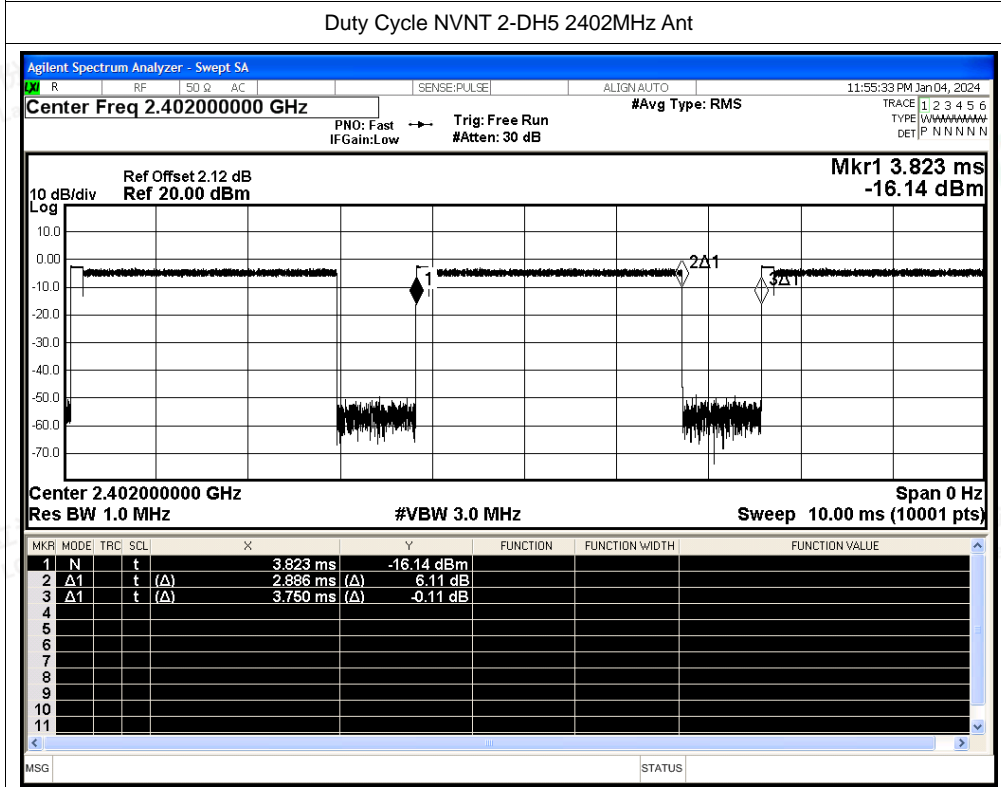
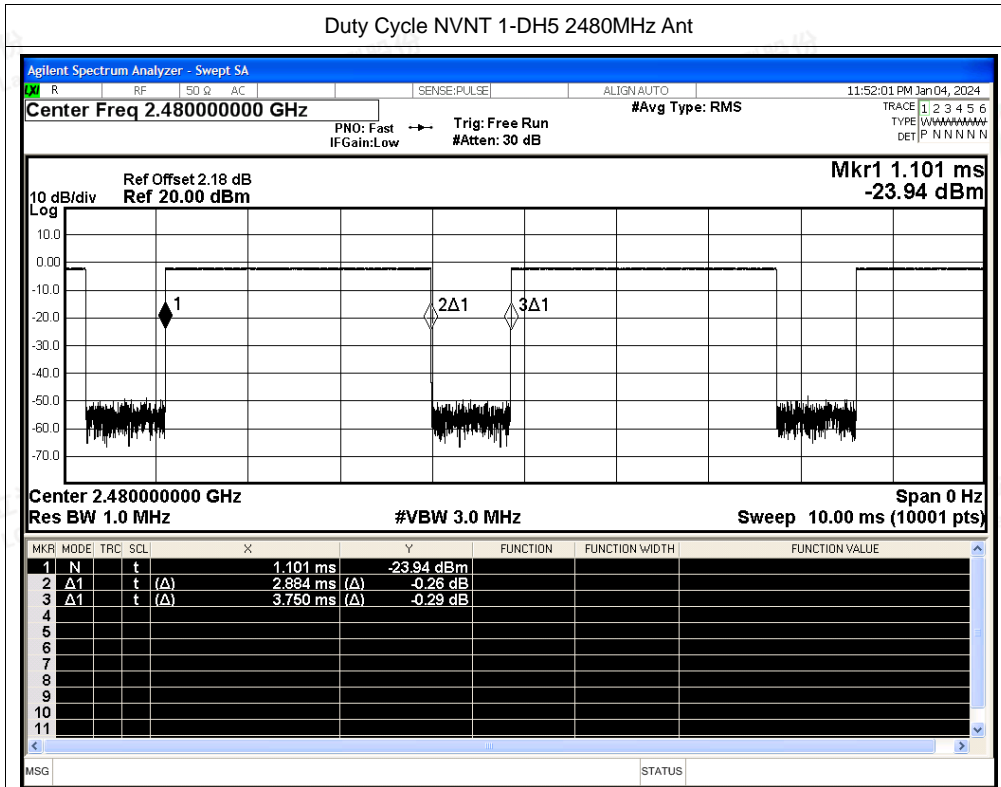
Test Graphs

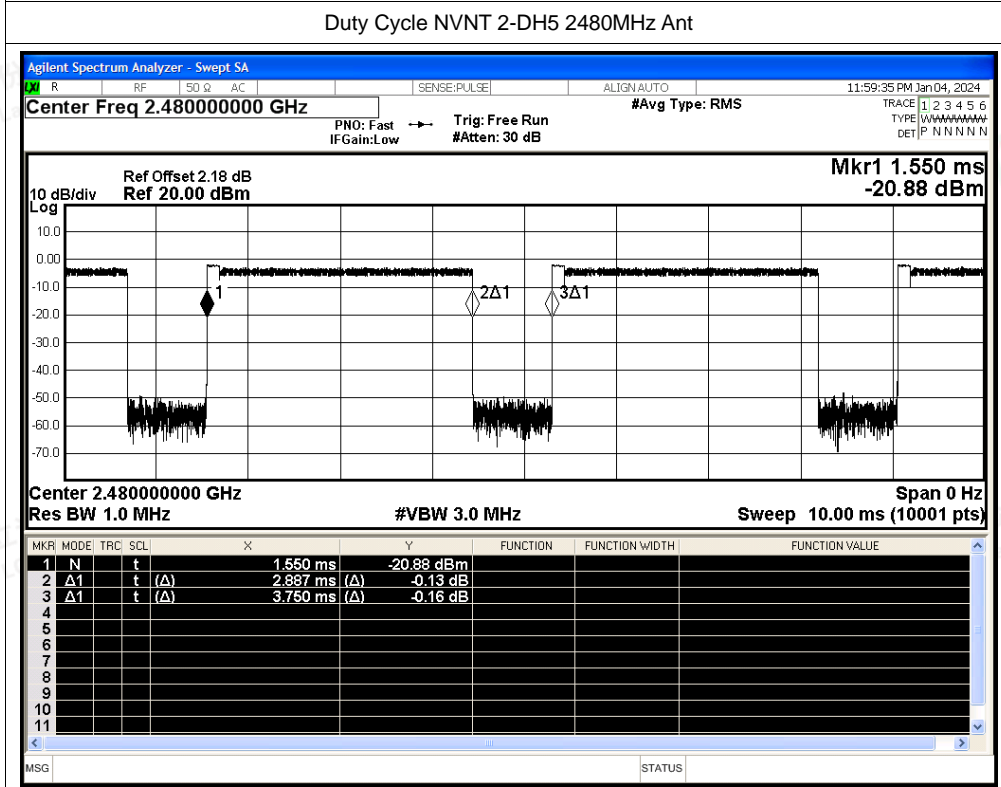
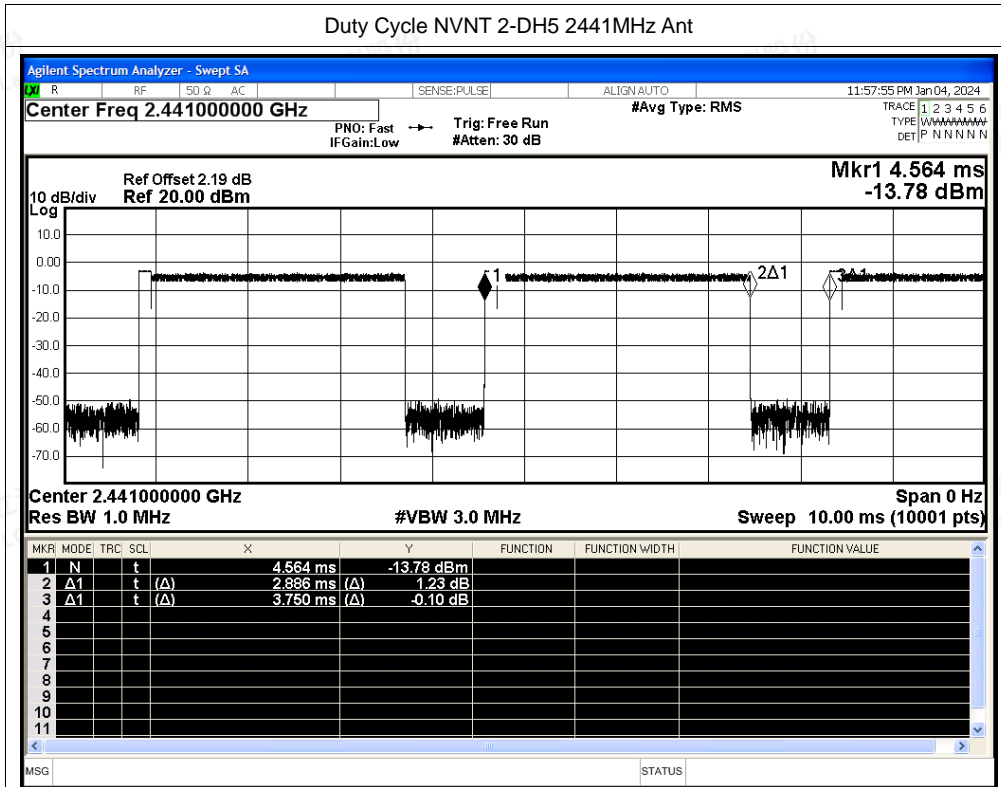
Duty Cycle NVNT 1-DH5 2402MHz Ant

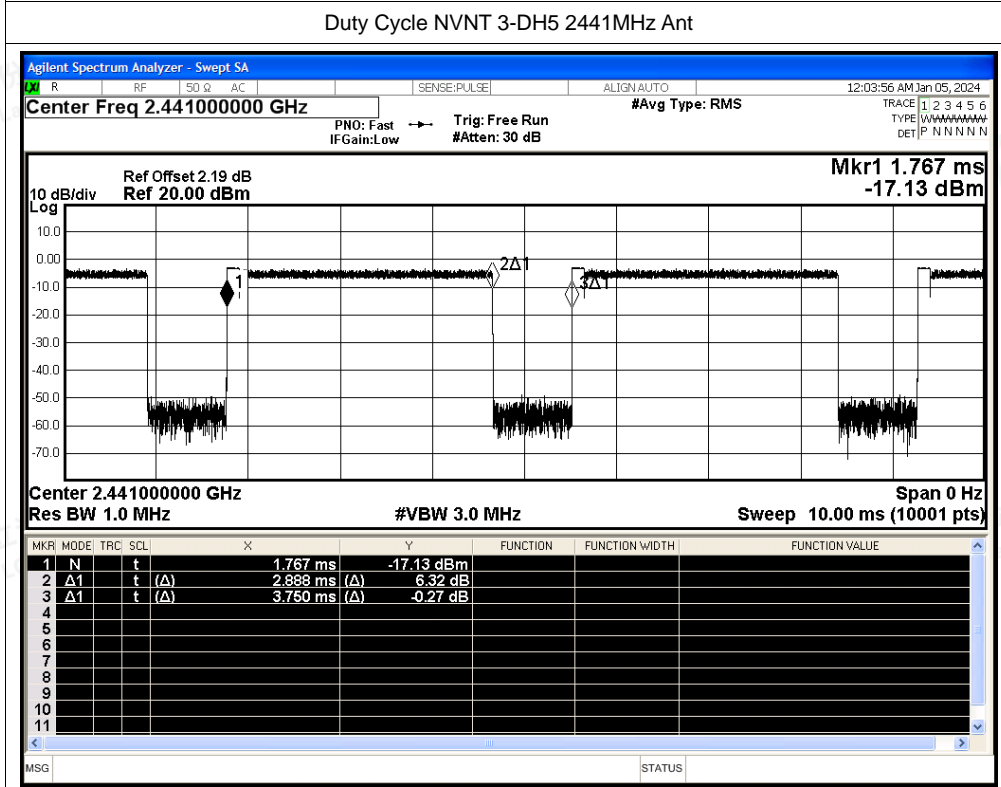
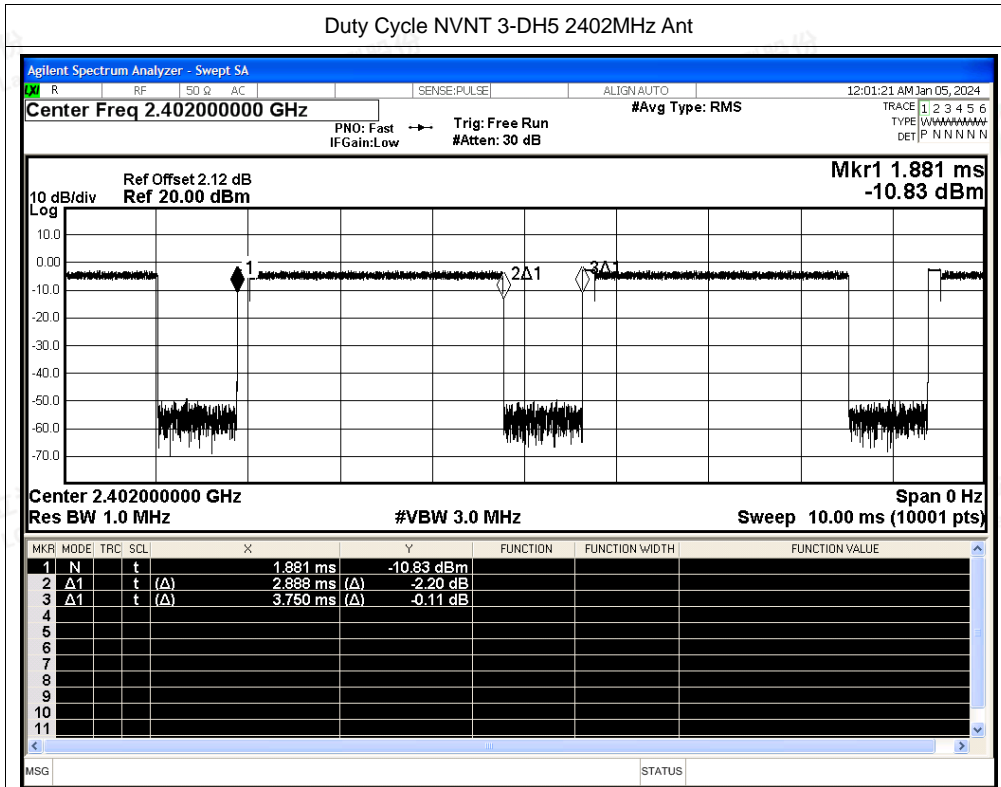


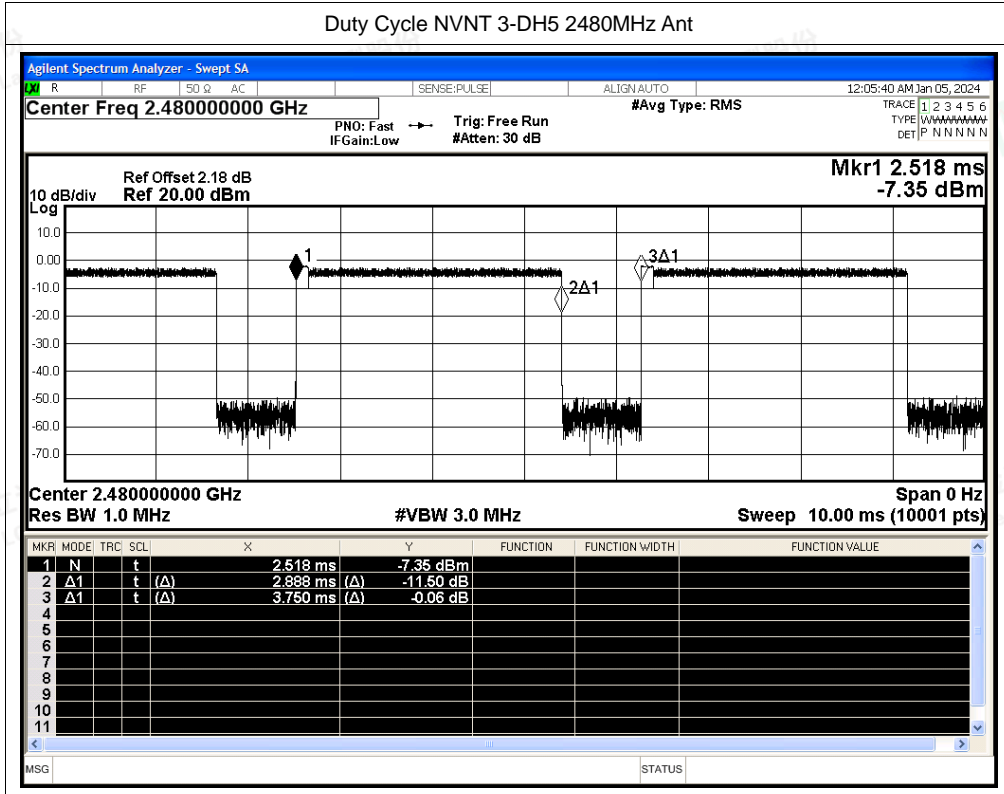
Duty Cycle NVNT 1-DH5 2441MHz Ant













### A.9 Restrict Band

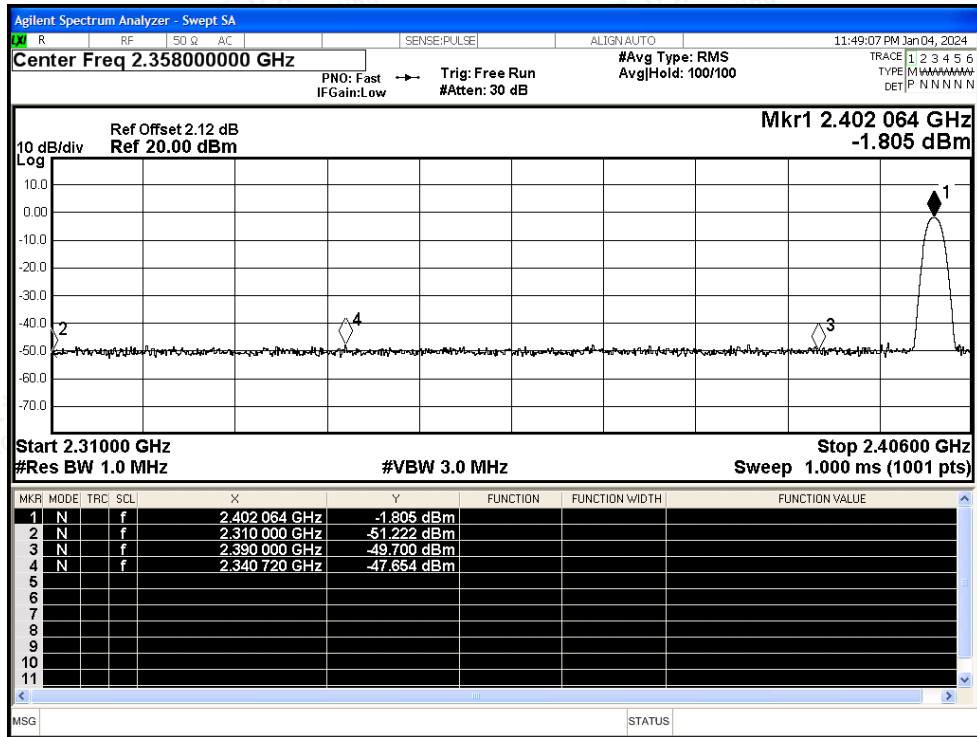
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant	No-Hopping	2310	-51.22	4.14	-	48.18	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2310	-58.94	4.14	1.14	41.60	Average	54	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2340.72	-47.65	4.14	-	51.75	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2348.016	-57.68	4.14	1.14	42.86	Average	54	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2390	-49.7	4.14	-	49.70	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2390	-57.97	4.14	1.14	42.57	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.5	-49.47	4.14	-	49.93	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.5	-58.14	4.14	1.14	42.40	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2487.064	-47.28	4.14	-	52.12	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2499.088	-56.94	4.14	1.14	43.60	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2500	-50.54	4.14	-	48.86	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2500	-57.52	4.14	1.14	43.02	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2310	-48.87	4.14	-	50.53	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2310	-58.51	4.14	1.14	42.03	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2319.6	-47.13	4.14	-	52.27	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2360.784	-57.52	4.14	1.14	43.02	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2390	-49.75	4.14	-	49.65	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2390	-58.03	4.14	1.14	42.51	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.5	-50.4	4.14	-	49.00	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.5	-57.86	4.14	1.14	42.68	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2489.272	-47.15	4.14	-	52.25	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2489.392	-56.94	4.14	1.14	43.60	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2500	-49.65	4.14	-	49.75	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2500	-57.95	4.14	1.14	42.59	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310	-50.54	4.14	-	48.86	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310	-58.37	4.14	1.13	42.16	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310.864	-46.86	4.14	-	52.54	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2388.72	-57.38	4.14	1.13	43.15	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2390	-48.83	4.14	-	50.57	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2390	-58.76	4.14	1.13	41.77	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.5	-50.61	4.14	-	48.79	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.5	-57.85	4.14	1.13	42.68	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2491.984	-47.18	4.14	-	52.22	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2496.544	-57.06	4.14	1.13	43.47	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2500	-49.59	4.14	-	49.81	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2500	-57.89	4.14	1.13	42.64	Average	54	Pass



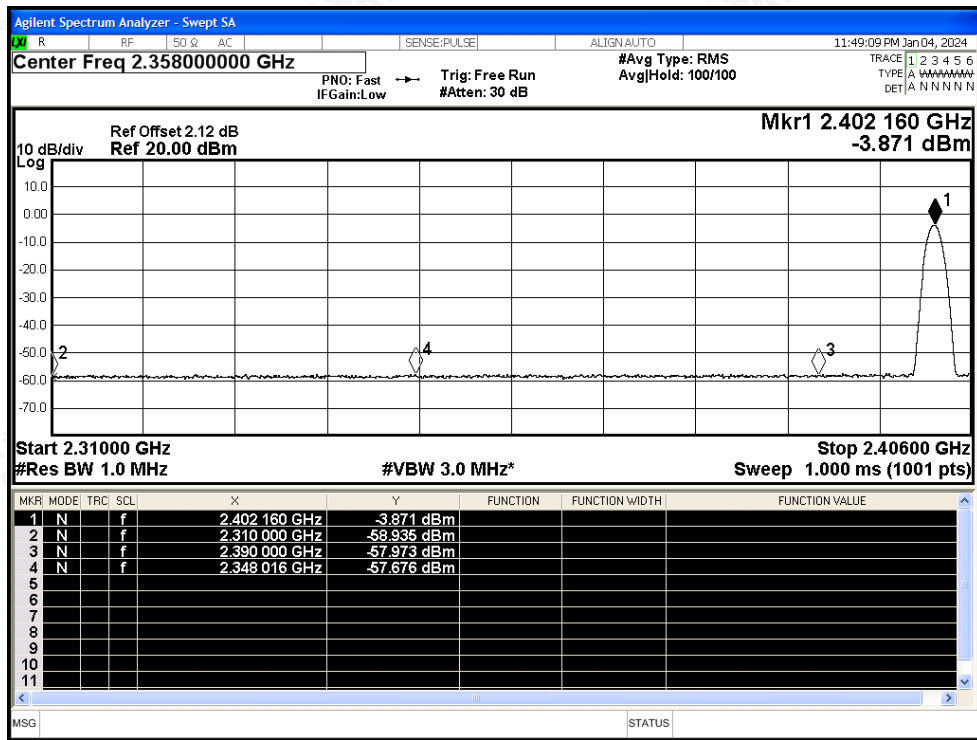


Test Graphs

Restrict Band NVNT 1-DH5 2402MHz Ant No-Hopping Peak

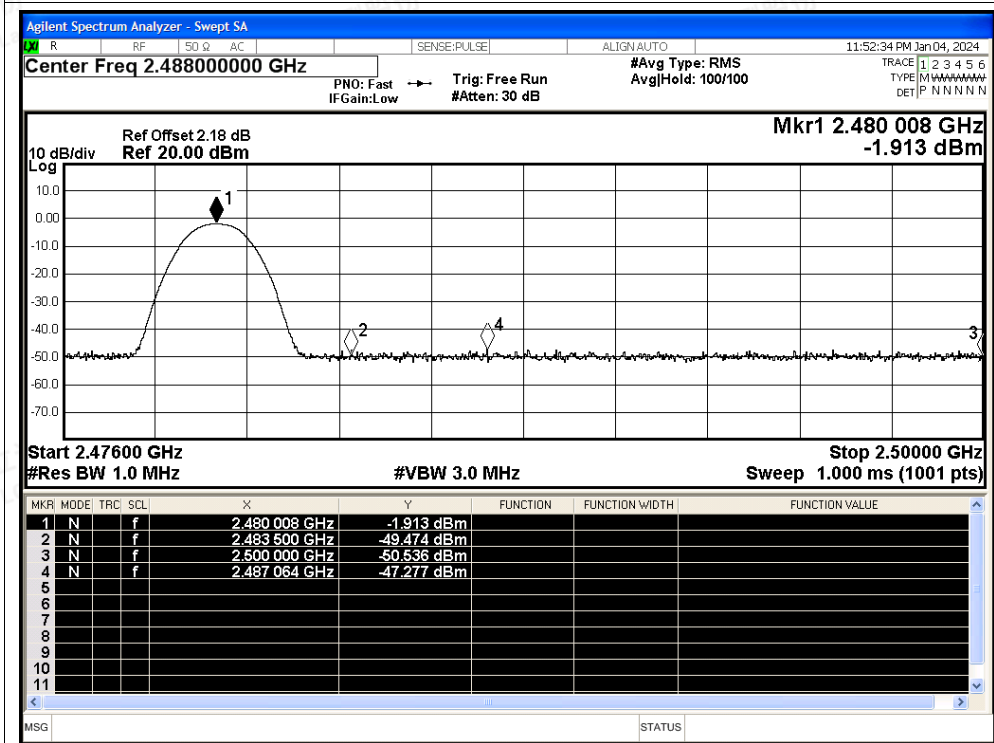


Restrict Band NVNT 1-DH5 2402MHz Ant No-Hopping Average

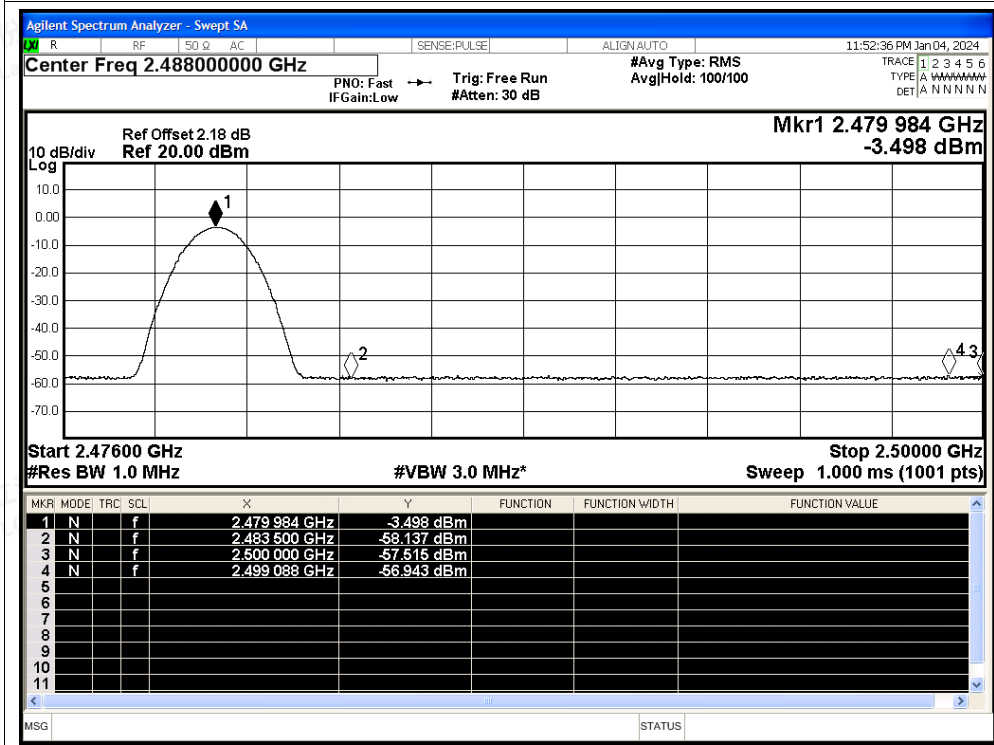




Restrict Band NVNT 1-DH5 2480MHz Ant No-Hopping Peak



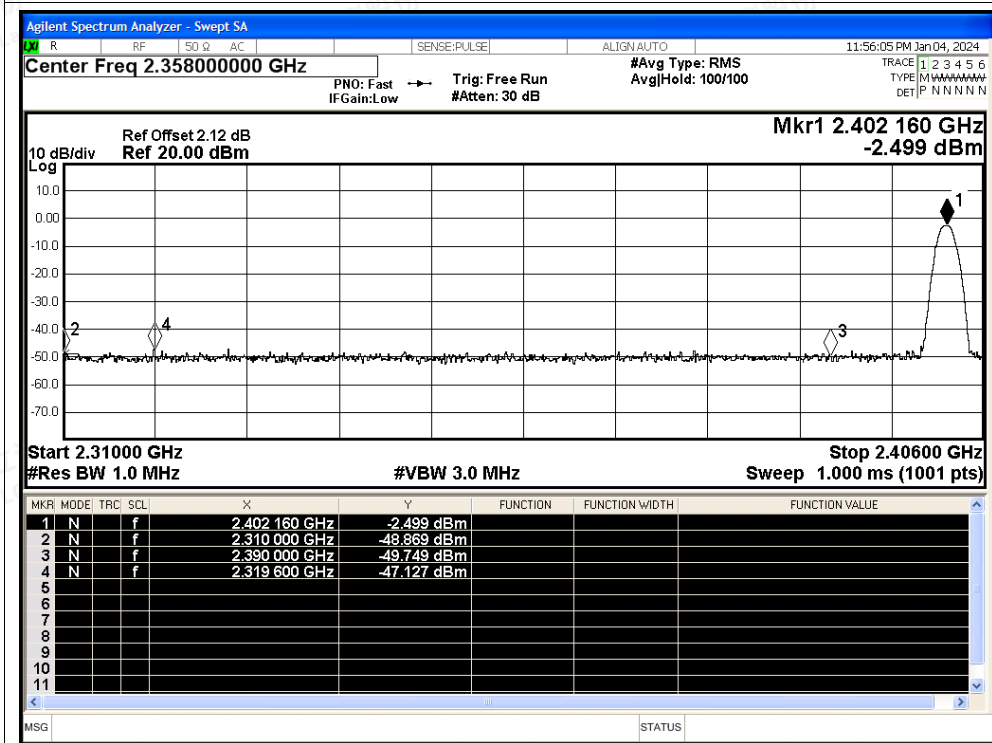
Restrict Band NVNT 1-DH5 2480MHz Ant No-Hopping Average



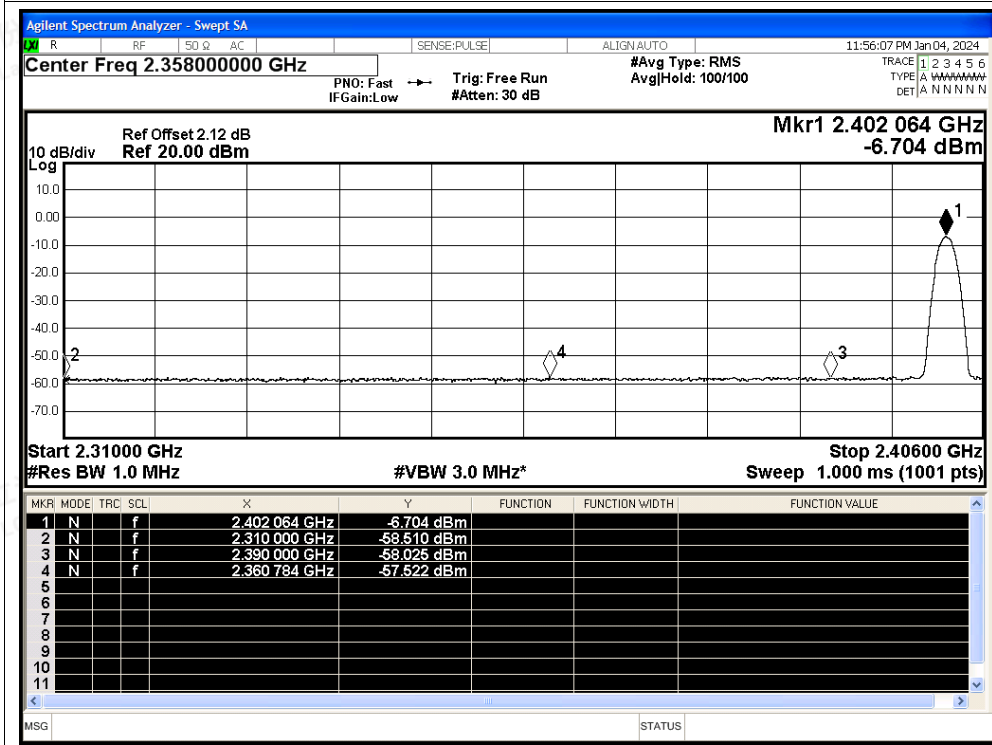




Restrict Band NVNT 2-DH5 2402MHz Ant No-Hopping Peak

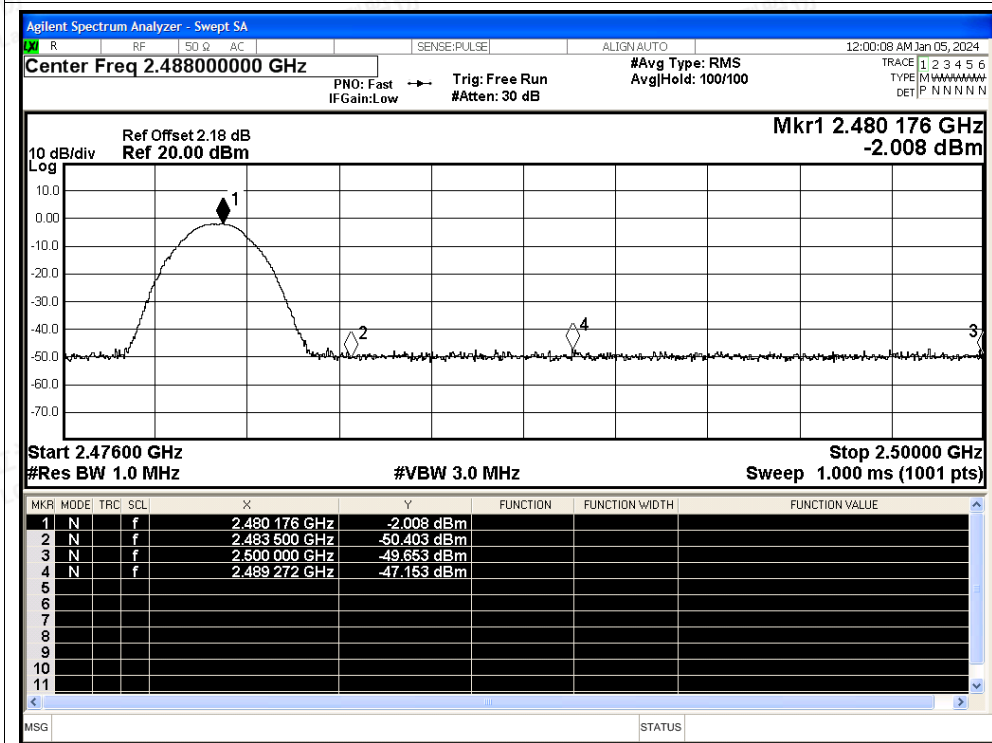


Restrict Band NVNT 2-DH5 2402MHz Ant No-Hopping Average

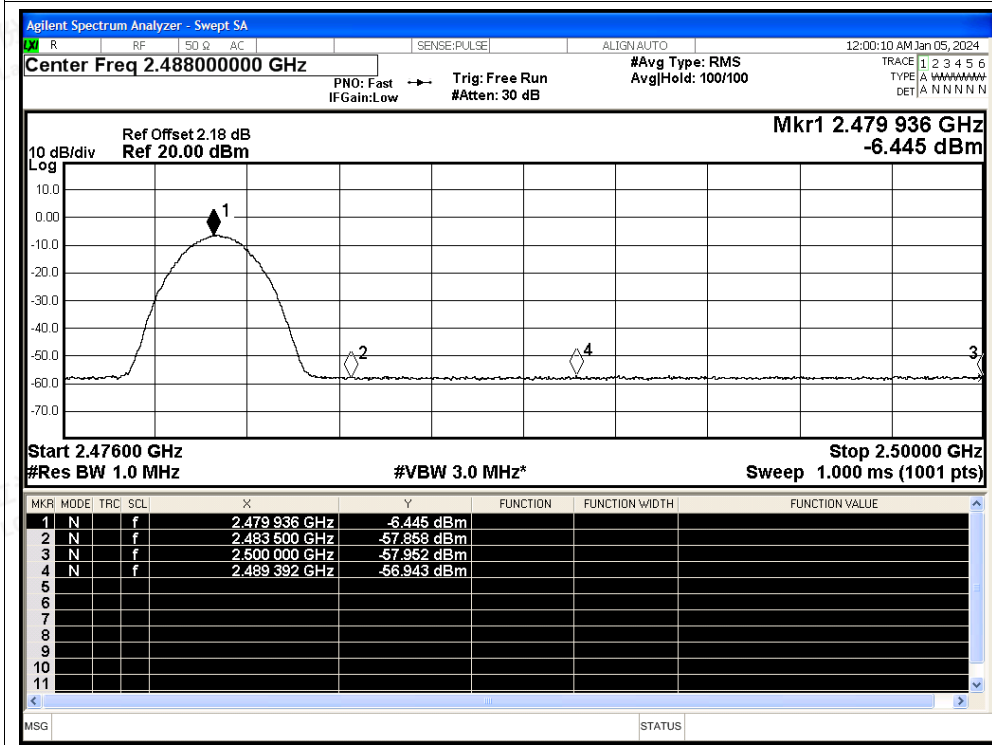




Restrict Band NVNT 2-DH5 2480MHz Ant No-Hopping Peak

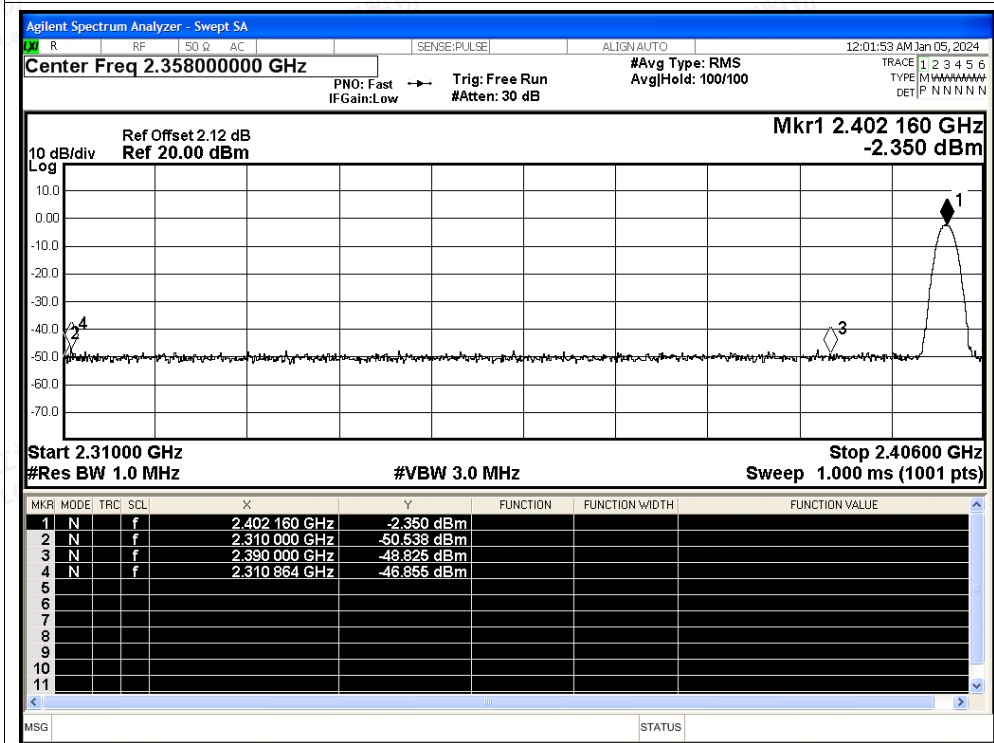


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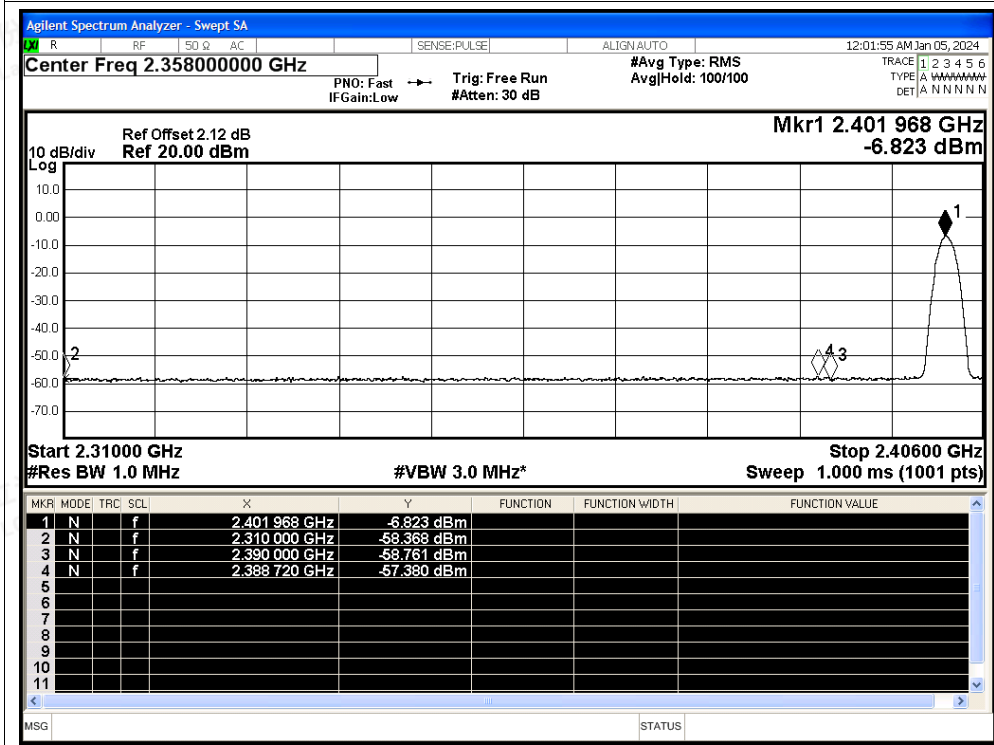




Restrict Band NVNT 3-DH5 2402MHz Ant No-Hopping Peak

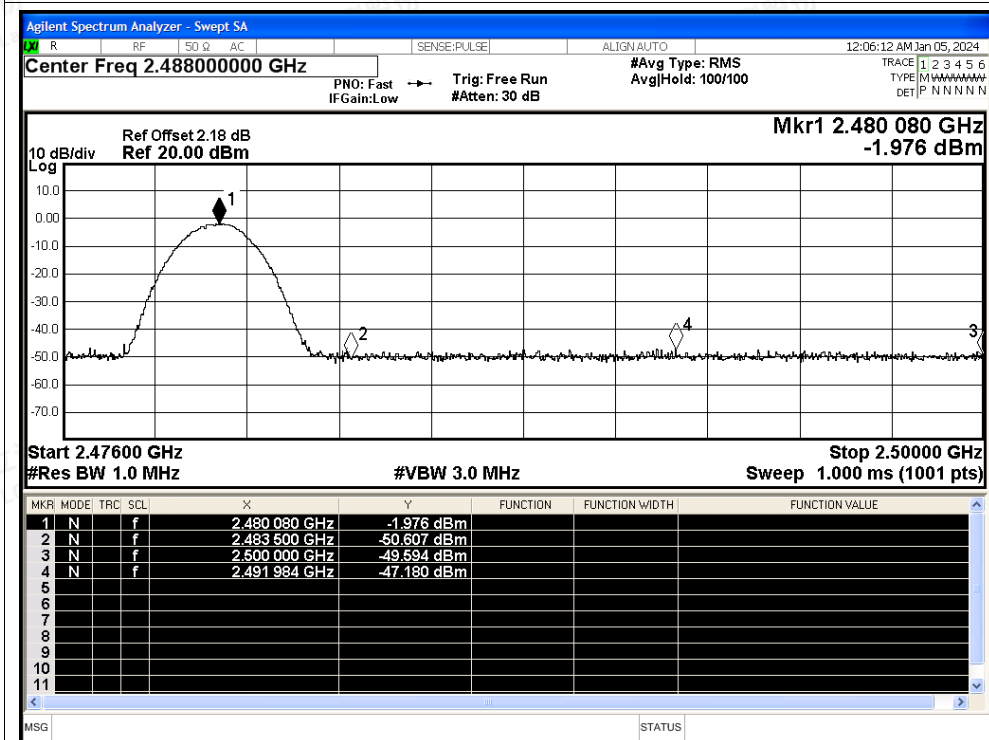


Restrict Band NVNT 3-DH5 2402MHz Ant No-Hopping Average





Restrict Band NVNT 3-DH5 2480MHz Ant No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant No-Hopping Average

